



FRIDAY, MAY 6, 1881.

Railroad Signaling in England.

In our issues of March 25 and April 15 we reprinted from the *Railway Engineer* the first two of a series of articles which that periodical is publishing. We give herewith the third of these, which has appeared in the April number of that journal:

Figs. 30 and 31 show diagrammatically an example of the previously described signals in combination as occur on the Brighton Railway, near New Cross. The respective roads to which the arms refer are described on the drawings.

In all these semaphore signals, the left-hand arm only concerns the driver of an approaching train, and is painted red, while the right-hand arm is white to render it comparatively invisible. The lamps may be constructed to burn either oil or gas. The white or black disks or bands painted on the red or white arm respectively are simply to render them more visible—they have no other purpose whatever.

Fig. 32 represents diagrammatically an inside view of a signal-cabin, with the levers for working the signals of one section of an ordinary "up" and "down" railway. There are six levers, three for the "up" and three for the "down" signals; the first works the "starting," the second the "stop," and the third the "distant" signals of each set. Of course this is a very elementary arrangement, with no special signal or point levers, and with no observance at present to the interlocking mechanism.

Having examined the elements of modern "out-door" railway signaling appliances, we will proceed to investigate the system on which they are worked in combination for conveying the requisite information between the signalmen and drivers to insure safety of traffic, and for this purpose we must at the same time take into consideration the electrical intercommunication of the signalmen located in the boxes.

In our last number we mentioned that upon the introduction of the electric telegraph "time signaling" became discarded for the more perfect system of "space" or "block signaling," a "system" which has now become generally adopted on most railways in the United Kingdom and likewise on the continent.

The "block system," as previously stated, is intended to preserve such an interval of "space" between different trains traveling in the same direction and upon the same pair of metals as will render accidents by collision impossible. This is accomplished by dividing the line into "sections" provided with electrical inter-communication and allowing no train to enter or be within the same section at the same time.

The machinery and instruments for transmitting the various signals—for putting this system into practice—are somewhat different or peculiar in design for certain railways, but the principle and object aimed at are exactly similar in all cases.

There are some objections to the "system" on the score of expense, or that the drivers are less careful now the safety of their lines is guaranteed, and there are cases in which the lines get fouled by accidents on the other metals, contingencies not provided for by the system. But still the block system is by far the best known, and is adopted on all lines where the traffic is heaviest and most dangerous.

In 1873, 6,217 miles out of 16,000 miles of railway opened were worked on this "absolute block system," and so satisfactorily that it is now extended over upwards of 10,000 miles of our railways, and a corresponding progress has been made with this system on the Continent.

To carry this "system" into practice the entire railway must be divided into a number of telegraphic sections by signal boxes in which are provided electrical instruments and connections for enabling the signalmen to communicate with the boxes on each side of them, as shown in the diagram at fig. 33. A, B, C and D represent four such sections divided by signal boxes from which men are capable of communicating with the next box on either side.

Although the sections are shown as being of equal length, this is seldom the case in practice, while the various stations are situated at convenient intermediate positions within these sections. The lengths of the sections vary from about half a mile to four miles, but the average distance is about one mile.

Assuming a train is ready to start from A, the signalman will warn B of the same; B will acknowledge the signal, and if his section be clear will telegraph to A to dispatch the train; this A will do by lowering his "starting semaphore," telegraphing immediately afterward to B that the train has started. B then "blocks" the section at A until the train has passed his box, when he returns the "line clear" signal to A. This is repeated throughout the entire series of sections, except in cases of "express" trains, when the signalmen send on signals of warning in advance. Now by this system it is obvious that if a train breaks down or gets delayed from some cause in any section it is protected by the interval of space always maintained between the trains from a succeeding train catching it up and running into it. Fig. 34 shows the one section between St. Johns and New Cross, Southeastern Railway, worked on the "absolute block system." The signalman at B gives "line clear" signal to A; A lowers his "starting semaphore" and dispatches the train and informs B of the fact, when the latter takes "off" his "distant signal" if the next section be clear, for this tells the driver on sighting the signal that his "stop" signal is likewise "off" although not yet able to sight it, while if the "distant signal" is against him, he proceeds slowly in order to stop, if necessary, this side of his "stop or home signal."

In practice, it is now almost impossible for the signalmen to give conflicting signals with regard to the sections, as by Messrs. Saxby & Farmer's arrangement the succeeding signals govern the action of the previous ones. That is to say, all the signals in section A B are controlled from the East London Junction box in section B C by interlocking and slotted signaling gear, thus B is unable to take his "distant or stop" signal "off" without the consent of C, the various signals being so governed by different men, separately located, render their action exceptionally safe.

Figs. 35 and 36 show such contrivances for controlling the action of "distant" and other signals. A and B are slots provided at a convenient position on the signal-rod (in the latter figure a modification or equivalent is employed) in which two counterweighted levers are worked by chains connected to their extremities. One lever, C, is capable of being actuated by one signalman, and the second one, D, by another situated elsewhere. When both levers are at the bottom of the slots the signal is held at "danger," and when one is moved up it is not sufficient to alter the signal; but when the second is raised from an independent source the signal is entirely released and thus drops to "all right" by its own weight; the signal, when subsequently desired, re-

turns to its normal position by means of the counterweights E, F. In the modified arrangement shown in fig. 36 the signal-rod is actuated on a similar principle through the intervention of a link motion.

In fig. 37 we show Mr. W. Frankland's method of indicating within a signal-cabin the position of any signals which may be worked in the open, out of the operator's sight. This mechanical repeater consists of a miniature semaphore, A, worked in the cabin by means of wires in connection with the out door signal, so that its corresponding and simultaneous action is transmitted within the signalman's sight.

It has been observed that the contraction and expansion of signal wires or chains is commonly allowed for by the intervention of screw-couplings, capable of being adjusted by the signalmen. But numerous patents have been obtained for all kinds of contrivances for rendering automatic compensation; we find Mr. Stevens prominent in the matter as early as 1859, Mr. Anderson 1864, and subsequently Messrs. Saxby & Farmer, Tyer and others. Fig. 38 represents Mr. Tyer's apparatus, as tried on the Brighton Railway. At the end of the signal-lever A is fixed in an arm, B, counterweighted at one end, and provided at the other with a pulley, C, round which the chain is passed in connection with the signal-pull, while the other extremity is sufficiently weighted to take up any slack. On the axis of the chain pulley is fixed a brake-wheel, D [see plan under fig. 38], round which is passed an elastic or weighted brake-strap, which, when the signal is in its normal position, rests upon adjustable stop E, but when the lever is moved to bring the signal into action it is raised from the stop and the brake being brought into action prevents the chain pulley from revolving.

Thus, as long as the signal is not being actuated, the chain pulley being free, the wire or chain is allowed to expand or contract as necessary, and the suspended weight always maintains the required tension, but when the lever is moved the chain and pulley are held by the brake, and then the desired pull can be transmitted to the signals.

Figs. 39 to 42 (inclusive) illustrate further means and apparatus for compensating for the expansion and contraction of distant signal wires.

Distant signals are worked at various distances up to about 1,600 yards, but any distances beyond 700 or 800 yards are troublesome.

Cheap and really reliable automatic wire compensators, which insure the correct working of distant signals, without any regulation or human superintendence, are an important adjunct to modern signaling appliances.

Fig. 39 represents the plan adopted by the Brighton Railway Company; it is simple and said to be very efficacious. The signal-pull, instead of being attached to the end of the lever, passes over a small pulley A, and from thence over a second guide pulley B, to the end of a compensating lever C, capable of moving in the arc D about the fulcrum E. Its action is not automatic, but dependent on human adjustment. The respective compensating gear is very near the signal levers, so that the signalman can readily take up the slack of his wires or let them out, by moving the small levers C, and securing them in the required position to maintain the tension by means of a pin passing through the arc D and the handles.

Fig. 40 shows a modification of the preceding method, in which the distant signal wire or chain passes over a large pulley A, on the lever's fulcrum, and from thence over a smaller one B, carried at the top of the main lever, and has attached to its free extremity a weight C, which is free to ascend or descend in guides according to the contraction or expansion of the wire; the weight is capable of being fixed in position by a pin passing through the guide checks and lever, as shown in the drawing.

Fig. 41 represents one of Messrs. Saxby & Farmer's arrangements for effecting the same object. This is a self-acting wire compensator, insuring easy and accurate working under all atmospheric influences, and is so arranged, that in the event of the wire breaking the signal flies instantly to "danger." The signal pull is connected at a convenient intermediate position with the lower end of the compensating lever A, to the upper extremity of which is attached the wire for actuating the distant signal, and which terminates on the small cam B. On the face of this cam is formed a pulley D, of larger diameter, to and round which is secured the counterweighted chain C. The fulcrum of the ordinary balance lever is carried out to E, while in or about the centre a small friction roller F is provided to engage with the cam projection G. The cam path is so formed as to lock the signal at danger at a certain part of its revolution, which can only be released in abeyance to the proper movement of the lever within the signal-box. When the signalman desires to take his distant signal "off," he pulls his lever over, thereby causing the compensating lever A to attain a vertical position, thus giving a certain amount of slack, or motion, to the upper wire, which is immediately wound up upon the cam-pulley B by the descent of the counterweighted chain C upon the larger pulley D, causing the whole to revolve. The cam or projection being situated on the same axis, is raised to engage with the signal balance-lever, and thus lowers the arm. When it is not required to actuate the signal, the counterweighted chain C, round the pulley D, serves to maintain the requisite tension of the wires, taking up the slack by its descent, or paying out during ascent in accordance with the expansion or contraction. Should the signal wire happen to break from any cause, the weighted arm of the compensating lever A drops, while the weight B descends, thus causing the pulley to partially revolve, whereby the cam F is disengaged, and the balance-lever lowered, and the signal put to "danger."

Fig. 42 shows another ingenious arrangement for automatic compensation, by Mr. G. Edwards, Signal Engineer to the Gloucester Wagon Works. The operation of pulling over the signal lever slackens the wire A and allows the weight B to descend, which causes the pulley C to revolve, over which the wire D passes to the ordinary balance lever upon the signal post. Thus the weight B pulls "off" the signal, while the former always tends during inactivity of the signal to keep the requisite tension in all temperatures. The weight B is suspended on a tumbling-lever E, one arm of which presses against the end of a detent lever F, and maintains the latter in a horizontal position. But the essential feature in his invention is the arrangement of the second wire or chain G, attached to the wire A, and passing over a second pulley H, and to which is attached a second weight J, by means of the link K, which holds the previously mentioned detent lever F, and consequently controls the weights B and J and tumbler E, which all rise and fall together, as the levers are moved in the cabin.

Now, should the wire A break, the weight B will descend until checked by the balance signal-lever, but the separation of the wire will set the second weight J at liberty, which likewise descends, depressing the detent lever F and releasing the tumbler detent E, when the main weight B falls off to the ground, and the wheel C being free, the balance lever causes the wire D to unwind, and the signal immediately resumes the attitude of "danger."

The compensator is placed in the centre of the wire as shown in the drawing, thus dividing the strain upon the wire in working. Several of them are in use on the Lancashire & Yorkshire Railway and have given every satisfaction. They are now being adopted by several other North and Midland county lines.

Hitherto we have only noticed "distant" signals as an intermediate source of information for the drivers, in order that they may know the condition of their "stops" in advance, and where they must be prepared to pull up if the signal is against them. But distant signals must be recognized and obeyed in some instances in a rather different way. That is, at junctions, when the "distant" is taken "off" just after the home signal, in which case a driver finding a "distant" against him, he proceeds slowly and carefully within it, whistles to the men at the junction box and prepares to draw up at his "home signal."

In the example previously given of a signal block section and its signals, only a "starter," "distant" and "stop signal" were shown and described, but sometimes a second or "rear stop signal" is provided between the distant and home signals in busy districts, as represented at fig. 43, so as to allow the trains to stop under cover of them and proceed when the opportunity offers. Because, it must be remembered, the cover of a "distant signal" is not very safe, as drivers proceed past them, when at any position, at almost all speeds, and frequently most cautiously. This system is extensively used on the Brighton line, where the signaling appliances and arrangements are exceptionally complete and efficient.

Similarly, advance "starting signals" are placed a little beyond a station, to allow the station to rapidly despatch departing trains. The main-line trains take the first "starter" and go right away, and almost immediately after, when necessary, the branch-trains may go as far as these "advance signals," but must there wait until the signals indicate the through section to be clear. This auxiliary system is likewise used by the London & Brighton Company, at their termini, and part of such arrangement is shown at fig. 44.

Fig. 45 shows another auxiliary signal employed by this railway company, at their London terminus, for indicating to the driver of an approaching train whether the bay into which he is going is entirely clear, or partly occupied by detached carriages. For this purpose a second arm A is provided under the main arm, and shaped like a "distant blade." When the bay is clear both signals are taken "off" together, but when partly occupied it behoves the more careful and cautious advance of the train, and the lower arm A is kept "on," while the upper one falls, thus informing the driver under what conditions he proceeds.

In some cases, where there necessitates a great mass or number of signals in close proximity, as at a busy terminus, disk-signals are used in combination with semaphores, to give distinction and reduce the complication. For example, fig. 46 shows an arrangement of disk and semaphore used at the Victoria terminus of the Brighton Railway. The platform are all provided with semaphore starters or departure-signals B, and in addition thereto small disk-signals C, carried on the opposite side of the post. The semaphores govern the ordinary platform traffic, while the disks control the shunting of carriages left on the main lines to the carriage-siding some distance off.

Fig. 47 illustrates another example of this combined type of signal, as schemed by Messrs. Saxby & Farmer for the London terminus of the Brighton Railway. Here there are eleven bays which may be approached from three lines and upwards, rendering the signaling arrangements most complicated and confusing. In order to minimize such detrimental results, disks in connection with semaphores are profusely used for giving contrast and distinction. Thus, the semaphore arm A tells the driver he may come on, and the lowered disk C indicates to him the particular bay ready for the reception of his train. These disks are illuminated at night by a projecting lamp D, and are only lowered from their circular sheaths E when the relative semaphore signal is "off." The disks really serve the same purpose as a corresponding number of semaphore arms, and are worked by levers and interlocked in the usual way.

Fig. 48 is an example of the "spread signal system" of the Brighton Railway as previously alluded to. Here, as will be seen, only one pair of semaphore arms is carried by each signal-post; the latter may be of varying height to facilitate distinction, and situated at a considerable distance apart, and the whole system is carried by a light lattice girder. The disk-signals carried on vertical spindles relate to the in and out engine traffic. The signal-box which controls them is located some short distance away.

Fig. 49 represents an elevation of the Cannon street station signals (looking from the station southward) on Messrs. Saxby & Farmer's most improved locking system. Here the different arrangement of semaphores from the Brighton line will be immediately seen, there being as many as four sets of arms on one post. At this station the trains are received into and dispatched out of eight bays, which are controlled by a corresponding number of signals. Four station lines are known as east, and four as west, with two sets of eight signals respectively to govern their in and out traffic. The "up" signals on the two left-hand posts are for trains approaching the station by the east "up" line, while those upon the two right-hand posts are for the west "up" line. No. 5 is a spare or siding line in the station. The signals and roads they govern will be readily understood by reference to the elevation (fig. 49) and the plan of station lines in fig. 50, the lines and signals being marked with corresponding numbers and approached from east and west. Separate signals are provided for the extreme west or Charing Cross line, and likewise for special cross-over roads. Only one train is received into the station at the same time, but two may be simultaneously dispatched, viz., one to Charing Cross and another to London Bridge. The small disk signals situated on the face of the girder, and numbering 1 to 9 from right to left, relate to engines, which, having brought trains in, wait their opportunity to proceed to the shed or siding to be prepared to take on to another out train. The small hanging semaphores (No. 5) control the in and out traffic of the spare line with corresponding number previously referred to.

All the platforms may be used for either the arrival or departure of trains, a great advantage in busy districts and seasons, and giving great facility for the ingress of trains in the morning and contrary traffic in the evening, for which purpose the platform lines are provided with cross-over roads, arranged so as to cause as little back shunting with main lines as practically possible. The relative points and signals are worked by over 70 levers, and it is of comparatively recent years that they have been provided with interlocking gear, a very beneficial result having been achieved by its adoption.

For it is worthy of notice with what ease and safety their daily traffic is conducted, notwithstanding the complication of a double junction at one end of a bridge, and one of the busiest termini at the other. Our readers will thoroughly appreciate the amount and nature of the traffic when they realize the fact that 750 trains pass in and out of Cannon street station in the course of 24 hours (about 130 between the hours of 9 and 11 a.m.), and on an average about 40,000 passengers use this station daily.

With regard to signaling arrangements, generally, it is always advisable to have a separate post and semaphore for each line at junctions, and where more than one pair of signals are used on a post the main-line semaphores should be always placed at the top, and then in rotation, the signals governing subordinate traffic, or auxiliary lines.

Many companies paint on the arms of their semaphores

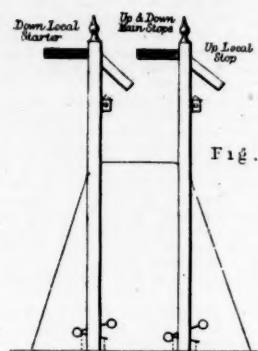
DIAGRAMS
OF
COMBINATIONS OF SIGNALS

Fig. 30.

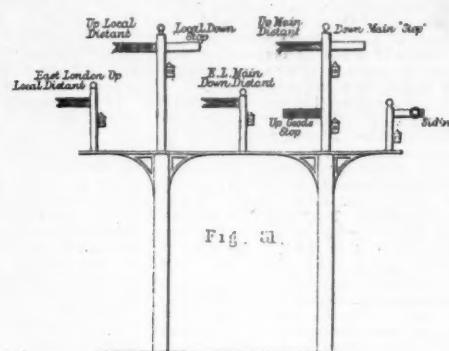
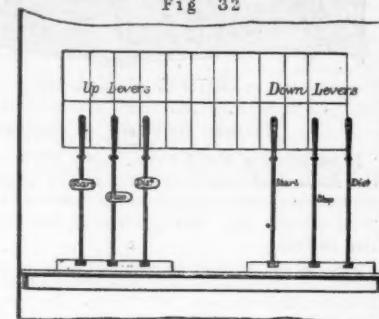


Fig. 31.

Fig. 32



SIGNAL CONTROLLING GEAR.

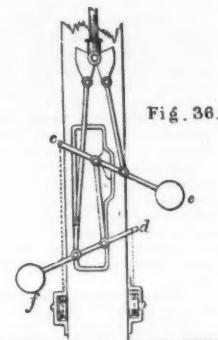
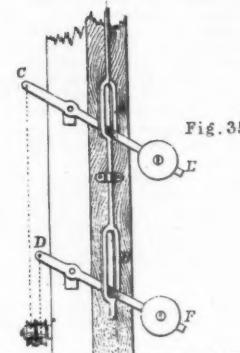


Fig. 35.

Fig. 36.

THE BLOCK SYSTEM



Fig. 33.



Fig. 34.

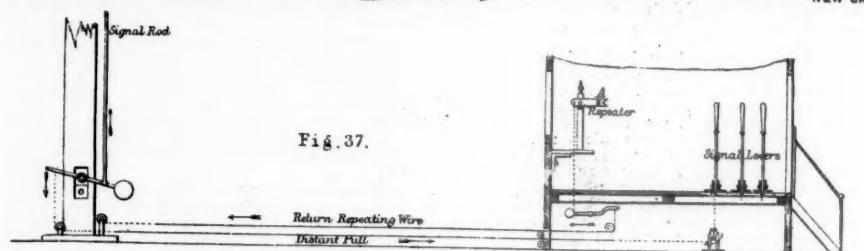


Fig. 37.

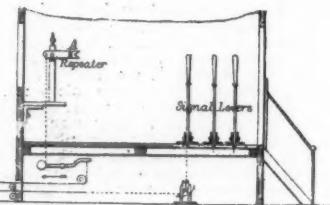
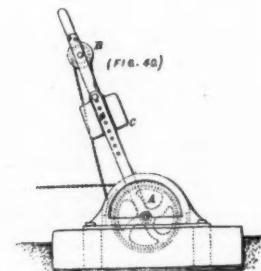
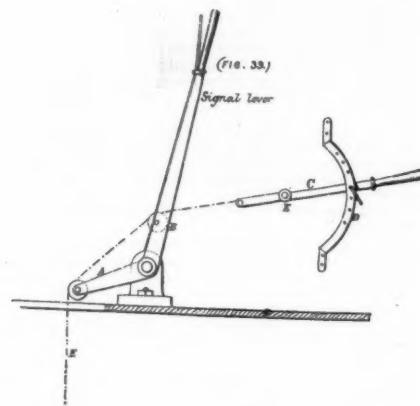
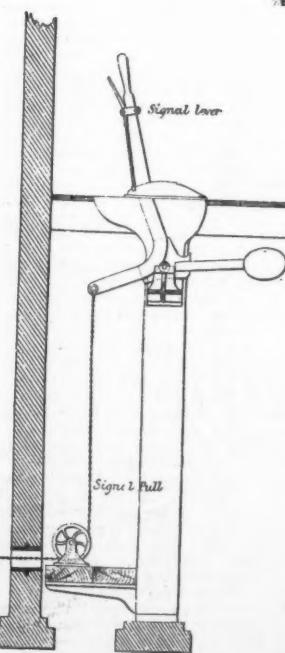
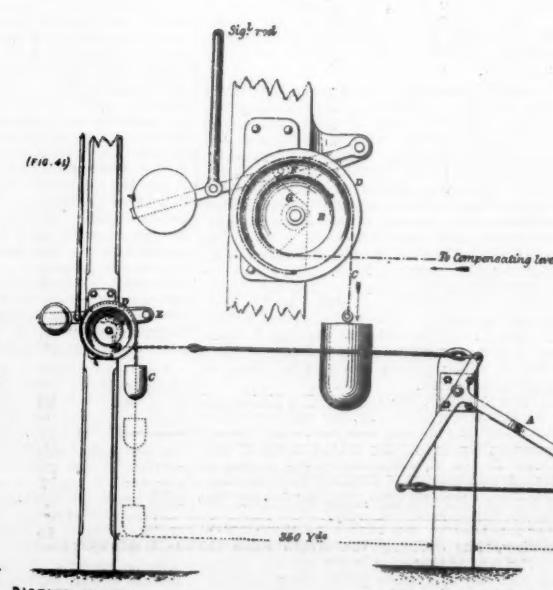
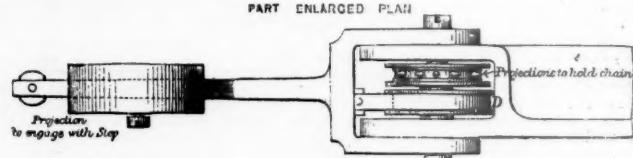


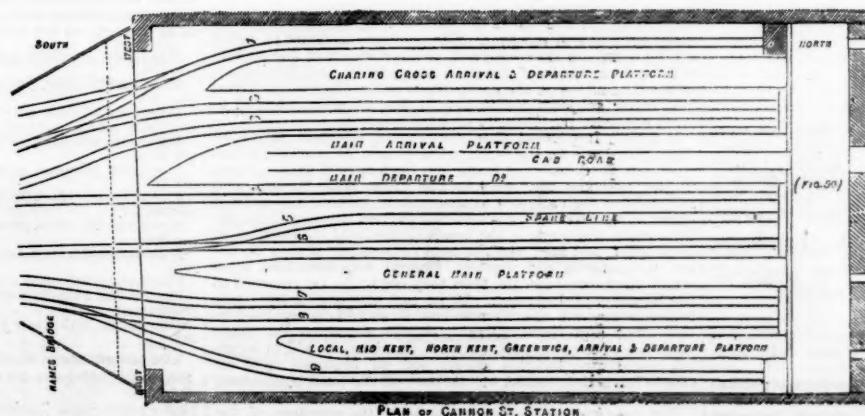
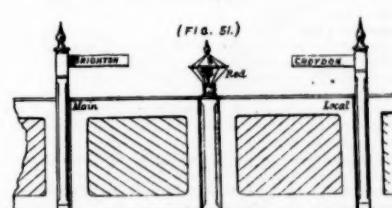
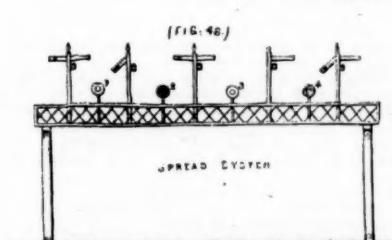
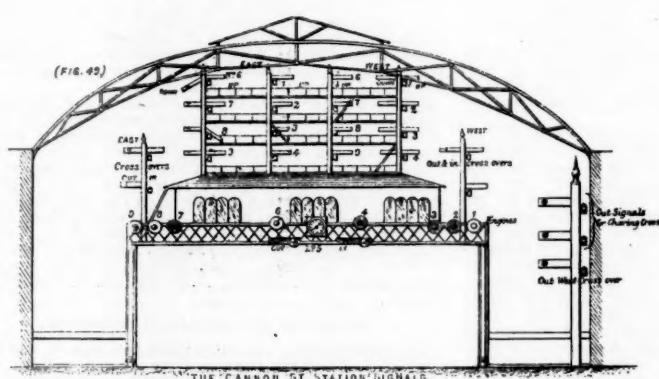
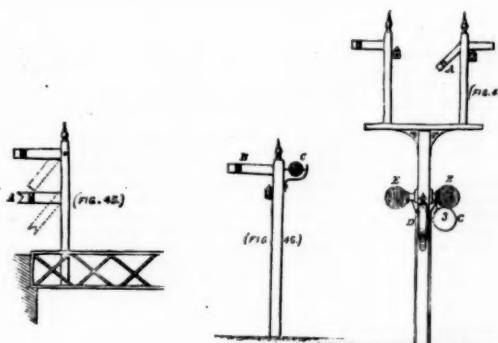
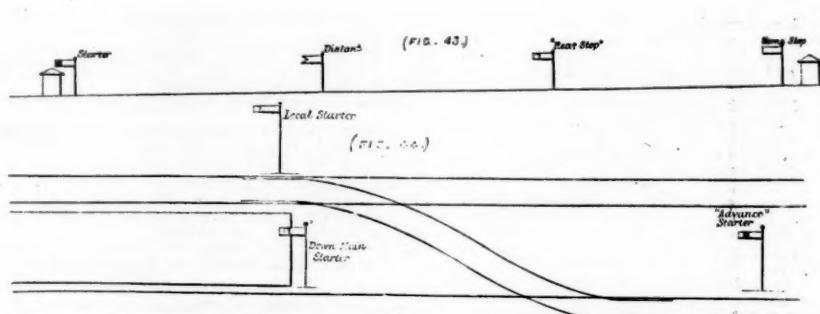
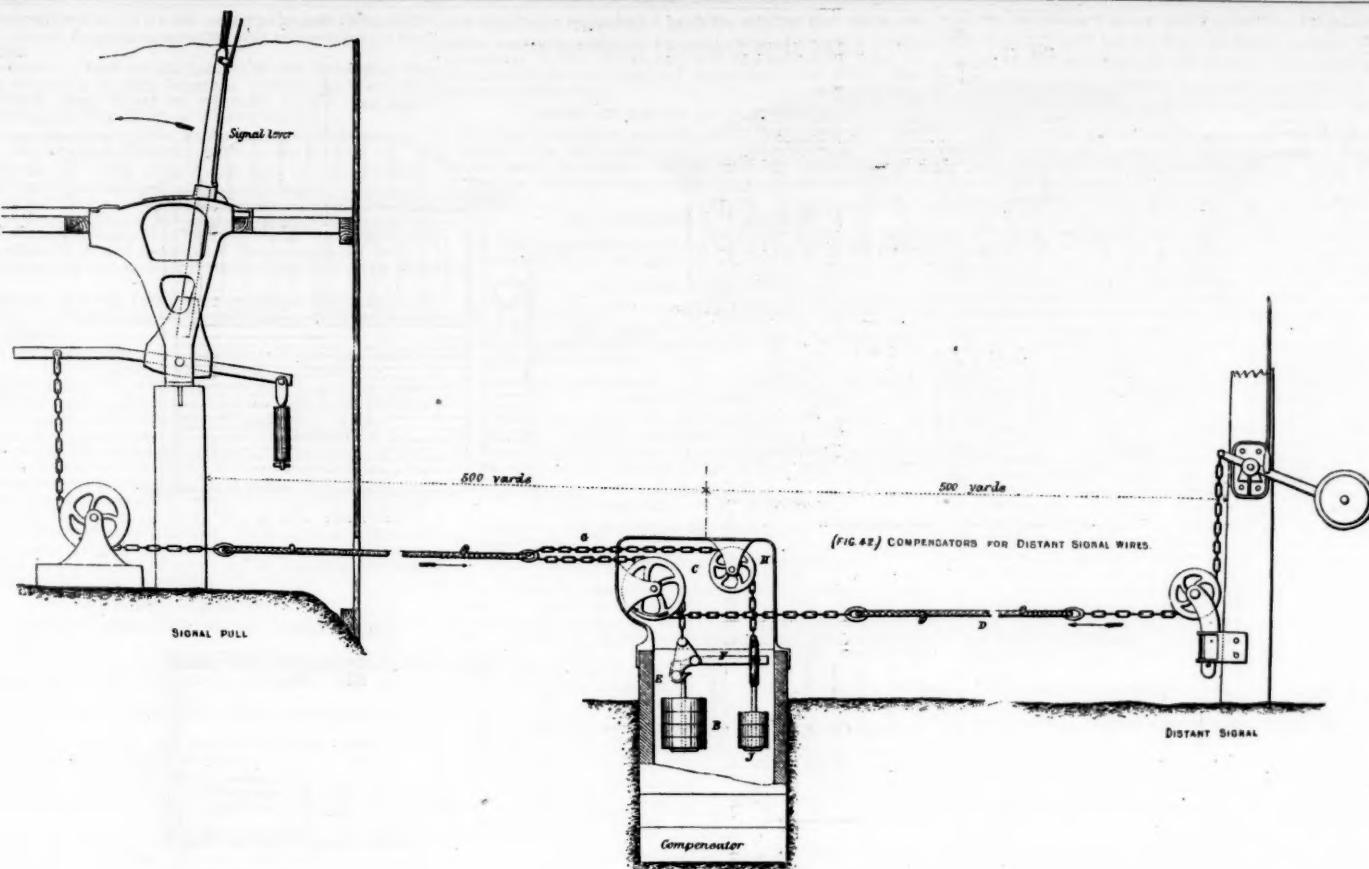
Fig. 38.



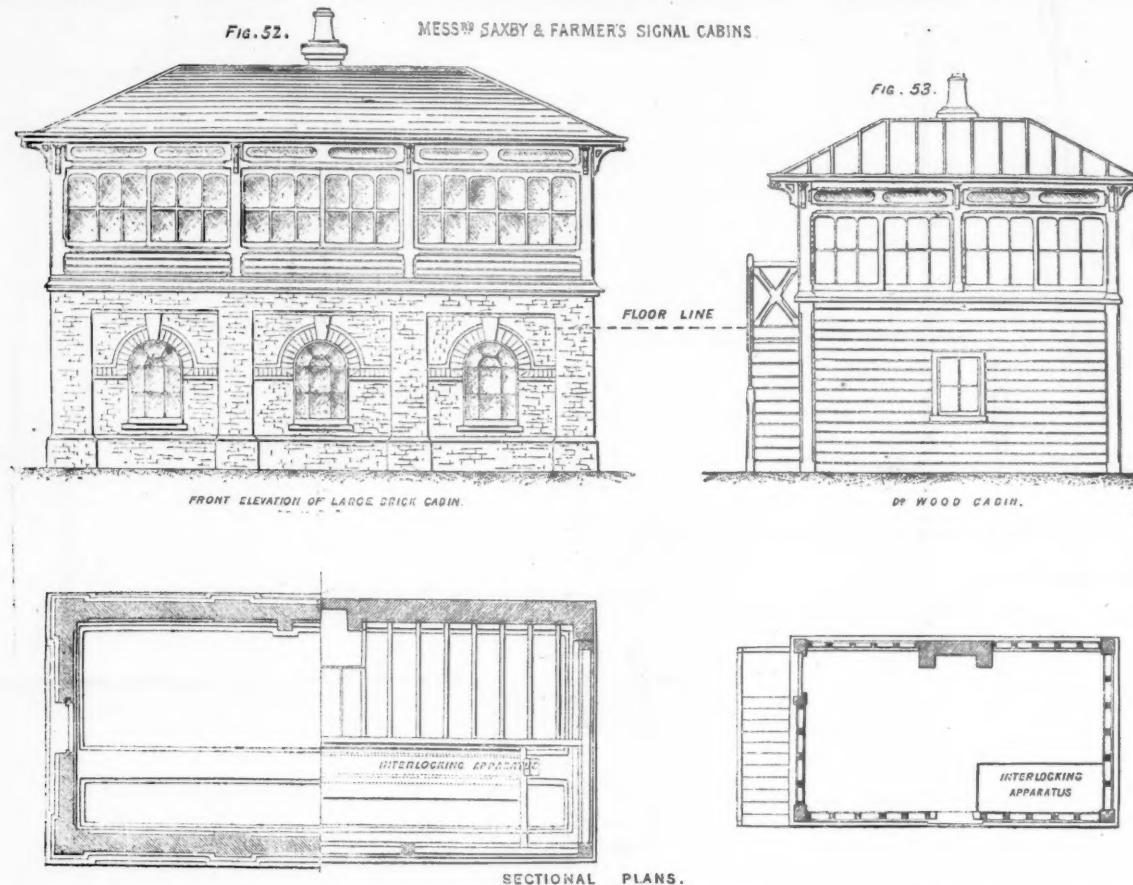
PART ENLARGED PLAN



RAILWAY SIGNALS.



RAILWAY SIGNALS.



the name of the road to which they refer, but this is of little use to the drivers of trains.

In 1867 Mr. Wilkins suggested that semaphore arms should be gilded instead of painted, to render them more distinct at a distance.

Fig. 51, represents a passengers' "train-describer" and subsidiary "starter," as used at London Bridge, Brighton terminus. The semaphore boards, held in recesses formed in the posts, have painted upon them the names of the various trains departing from that platform, and to which they refer—any particular one is raised by means of a small counter-balanced rod according to the relative train next to depart. The small lamp in the centre of the barrier is provided with green glass one side, and red on the other, and acts as a "subsidiary starter," as previously described in fig. 22.

Figs. 52 and 53 illustrate front elevations and plans of recent designs in brick and wood for signal boxes or cabins. They are a type frequently erected by Messrs. Saxby & Farmer, and are light, durable and elegant, with the requisite provisions for light, heat and ventilation.

Joint Executive Committee Meeting.

Pursuant to the call of the Chairman, the Joint Executive Committee convened at No. 346 Broadway, New York, Wednesday, April 27, the following companies being represented:

Baltimore & Ohio, Jno. King, Jr., M. H. Smith.
Boston, Hoosac Tunnel & Western, A. A. Gaddis, F. L. Pomeroy.
Cairo & Vincennes, N. S. Pennington.
Canada Southern, W. P. Taylor, W. H. Perry.
Chicago & Grand Trunk, C. B. Peck.
Cincinnati, Hamilton & Dayton, A. H. McLeod.
Cleve., Col., Cin. & Ind., O. B. Skinner, L. Hills, E. Hill.
Evansville & Terre Haute E. S. Babcock, Jr.
Fitchburg, F. L. Parker.
Grand Trunk, John Porteous.
Grand Rapids & Indiana, A. B. Leet.
Great Western, G. B. Spriggs.
Indianapolis & St. Louis, H. W. Gays.
Ind. Bloom. & West., H. C. Diehl.
Lake Erie & Western, E. H. Waldron.
Lake Shore & Michigan Southern, John Newell, G. H. Vaillant, J. T. R. McKay.
Louisville, Cincinnati & Lexington, Jacob Kreiger.
Marietta & Cincinnati, R. M. Frazer.
Michigan Central, H. B. Ledyard and J. A. Grier.
New York Central & Hudson River, J. H. Rutter and H. J. Hayden.
New York, Lake Erie & Western, G. R. Blanchard.
New York, Pa. & Ohio, G. C. Cochran.
Ohio & Mississippi, W. Duncan.
Pennsylvania Co., J. N. McCullough, W. Stewart.
Pitts., Cin. & St. Louis, F. H. Kingsbury.
Pennsylvania Railroad, J. McC. Creighton.
Peoria, Pekin & Jack., H. O. Canfield.
Phila., Wil. & Balt., J. S. Wilson.
Vandalia Line, H. W. Hibbard.
Wabash, St. L. & Pac., A. C. Bird.

The following companies, members of the committee, were not represented: Boston & Albany, Cumberland Valley, Chicago & Alton, Chicago, Burlington & Quincy, Cincinnati, Indianapolis, St. Louis & Chicago, Illinois Midland, Louisville & Nashville, New York & New England, New York, New Haven & Hartford, Peoria, Decatur & Evansville.

The following joint agents were also present: R. M. Moore, T. C. Moore, W. H. Cruger.

Albert Fink, Chairman, presided, and C. W. Bullen, Assistant Secretary, acted as Secretary of the meeting.

MR. FINK'S ADDRESS.

The Chairman said: This is the first general meeting of the Joint Executive Committee that has been held since Sept. 16, upward of seven months ago.

It is one of the great advantages of our present organization that the business of the associated roads, now 41 in number, can be conducted satisfactorily without frequent meetings, thus saving much time and trouble to the officers, and much expense to the railroad companies. And what is even of greater advantage, the business of the associated roads can be more properly transacted than would be possi-

ble if it had to be done through periodical conventions. The difficulties of bringing together the representatives of so many companies at one place and at the same time, are fortunately avoided, and the business can now be transacted continuously instead of spasmodically.

Since the time of the last meeting, the several committees have satisfactorily discharged their duties, and their recommendations have been acted upon. Circulars 214 to 260, issued from this office, show the work that has been done.

The most important action that has been taken since the existence of the Committee is the agreement of March 11, which has now been voted upon in the affirmative by all the members of the Committee, with the exception of the Vermont Central Railroad Company and the Louisville & Nashville Railroad Company. This agreement is now the law of the association. One of its best features is that in order to carry it out effectually it is not necessary that all the members should agree to it, as it can be readily enforced as long as a single member is willing to be governed by it. The beneficial effect of this agreement is already noticeable in the present maintenance of rates, which are now more strictly adhered to than they have been at any previous time.

It is now in the power of any member who feels sure that a competing road has endeavored to draw business to its road by secretly reducing rates, to protect himself by requiring a general reduction of the rates to the basis of the lowest special rate, thus removing all inducements for railroad companies to pay and for shippers to ask for rebates, as neither can profit by it, and secure any advantages over their respective competitors.

The action of the Committee of course will not be acceptable to a large class of shippers, who have heretofore enjoyed exclusive privileges, and great efforts will no doubt be made on their part to break up the arrangement if they can. They will appeal through board of trade meetings to the prejudices of the people, and complain that the action of the railroad companies in their efforts to establish and maintain a reasonable and properly adjusted tariff throughout the country is wrong and should not be permitted. But as the railroad companies act in direct compliance with the petitions which have been sent to state legislatures and to Congress, asking for laws that are to accomplish the very purpose which the railroad companies desire to accomplish by their co-operation or combination, it is to be hoped that the railroads will have the support of these commercial bodies, who should no longer permit their members to use all sorts of means to secure, each for himself, reduced rates of transportation; and then, if they succeed, complain that the railroads are making unjust discriminations.

If the merchants' associations would make the same efforts as the railroad associations to control their members, and put a stop to these practices, there would be no need for appeal to legislatures.

Circular No. 259 shows the various subjects that are to be acted upon at this meeting. The principal measure in which all the members are concerned is the revision of the classification, the revision of the percentage table, and the reports of the committee on the competition of the Mississippi River. The other subjects mentioned in the circular referred to (259) are more particularly of local interest.

It is very important that some more effective provision should be made by the terminal railroads at various points at which the division of traffic has been agreed upon to even up the balances that may accrue from time to time, and which have been allowed to accumulate without any earnest effort on the part of the interested parties to even them up. This whole matter is in the hands of the local committees at each point, and they must be held responsible if they do not act promptly in the matter. Should any questions arise which they cannot settle, then they ought to be referred to the Board of Arbitration. Or in case any one of the roads fails to carry out the agreements, it should be reported to this office, and the Chairman should call upon the other members of the Joint Executive Committee to aid in securing compliance, but this should not be required until all efforts have been made, on the part of the local committee, to settle the difficulty among themselves.

This meeting has been called to bring the members of the various committees together, for the purpose of adjusting all questions that may have arisen at the various points where traffic has been divided. After the general business of the General Committee has been transacted, the local com-

mittees named in the call, from sections 4 to 12, will meet for that purpose.

In addition to the subjects mentioned in the call, from sections 1 to 14, as per circular 259, the following subjects will be brought up for consideration:

15. Rates on wool from Michigan, passing through Detroit.

16. Establishment of rates from Chicago to Montreal.

17. Restoration of rates on live stock.

18. Request of Southwestern Railway Association to withdraw all agents west of the Mississippi River.

I have to announce that since the last meeting the New York, New Haven & Hartford Railroad Company has become a member of this Association.

The meeting is now ready for business. Is it your pleasure to take up the subjects in the order named in the call?

ALL-RAIL RATES WEST OF BUFFALO ON WEST-BOUND BUSINESS.

Mr. Blanchard said that he would prefer to take up first the question of west-bound rates from Buffalo, and called attention to the fact that tariffs had been issued by the rail lines which were below the proportion of the all-rail rate, and as this question affects all the interests of the members of the committee as well as the interests of Philadelphia and Baltimore, he considered it important that prompt action should be taken by the committee.

After some discussion, and the amendment of the original resolution offered by Mr. Blanchard was adopted, the whole question was referred to a committee consisting of the parties immediately interested in this subject, to be appointed by the Chairman, and to report to the meeting what in their judgment was the best plan to be adopted. The Chairman appointed the following members on the committee, with Mr. Blanchard as Chairman: G. R. Blanchard, M. H. Smith, G. B. Spriggs, W. P. Taylor, O. B. Skinner, H. J. Hayden, W. H. Perry, J. A. Grier, J. Mc. Creighton, John Porteous, James Smith, E. P. Ripley, A. C. Bird, G. H. Vaillant, W. Stewart.

REPORT OF CLASSIFICATION COMMITTEE.

The Classification Committee made two reports, one dated Cincinnati, March 29, 1881, and the other New York, April 28, 1881, which were adopted, with the understanding that the changes made are to take effect on May 9, 1881.

These reports made a large number of additions and changes in the classification, and the following resolutions, passed unanimously by the committee, which will be of general interest:

"1. Resolved, That in the opinion of this committee it would be advisable to have eleven classes instead of ten, as at present, having seven fixed rates or classes, instead of six as at present, on the following basis, viz.:

Fixed rate 1st class, present rate Chicago to New York, \$1.20 per 100.

Fixed rate 2d class, present rate Chicago to New York, 90 cents per 100.

Fixed rate 3d class, present rate Chicago to New York, 70 cents per 100.

Fixed rate 4th class, present rate Chicago to New York, 60 cents per 100.

Fixed rate 5th class, present rate Chicago to New York, 50 cents per 100.

Fixed rate 6th class, present rate Chicago to New York, 45 cents per 100.

Fixed rate 7th class, present rate Chicago to New York, 40 cents per 100.

Fluctuating 8th class articles, now classed as 7th or provision rate.

Fluctuating 9th class articles, now classed as 8th or grain rate.

Fluctuating 11th class articles, now classed as 9th, or 5c. above provisions.

Fluctuating 10th class articles, now classed as 10th, or lumber rates.

The present rates would give:

8th class Chicago to New York.....	40
9th " " " "	35
10th " " " "	45
11th " " " "	35
	(April 1, will be 30.)

"This suggestion of your Classification Committee is made in the hope that a large number of articles now in the fluctuating seventh class can be placed in a fixed seventh class,

and many articles which we are asked to transfer from sixth class to present fluctuating seventh may be provided for in a fixed class.

"Resolved, That in the opinion of the committee, the present inequality in rates from the East to the West, and from West to East, would be overcome by reducing rates from Chicago to New York, as follows, viz.:

1st class from \$1.20 to \$1 per 100 lbs.

2d class from 90 cents to 85 cents, per 100 lbs.

and thereby do away with complaints in regard to high rates on the upper classes of east-bound freight.

"Resolved, That a committee of five be appointed to take into consideration the subject of the proposed new fixed 7th class, and other changes that may be rendered necessary in connection with it, and report at a future meeting of this committee as to what articles should be placed in the new class.

"Adopted, and the following committee appointed, viz: C. L. Cole, G. G. Cochran, J. T. R. McKay, R. M. Fraser, J. M. Osborn."

REPORT OF COMMITTEE UPON COMPETITION OF THE MISSISSIPPI RIVER ROUTE.

Mr. John King, Jr., Chairman of this committee made an elaborate report, which was read, and concerning which the following resolution was offered and adopted, viz.:

"Resolved, That the report of the 'Committee on Competition of the Mississippi River Route,' be accepted for consideration; that the same committee be continued, and that they make further investigation and gather additional facts, and report such information with recommendations, from time to time to the Chairman, to be laid before future meetings until the subject is disposed of by definite action of the Joint Executive Committee; that all parties having information on the subject be requested to transmit the same to the chairman of the committee."

THURSDAY'S MEETING.

The committee reassembled pursuant to adjournment, at 12:45 p. m.

REPORT OF COMMITTEE ON RATES WEST FROM BUFFALO, ON BUSINESS RECEIVED AT BUFFALO FROM THE ERIE CANAL AND LOCALLY.

Mr. Vaillant, Secretary of the committee, read the following report:

"All the members of the committee were present but Messrs. James Smith and E. P. Ripley.

"The following resolution was offered:

"Resolved, That rates from Buffalo on all classified articles received at that point locally, or from the canal, be made:

"Buffalo to Chicago, 1st class, 40 cts.; 2d class, 34 cts.; 3d class, 25 cts.; 4th class, 17½ cts.; 5th class, 15 cts.; and on same basis and scale from that point to all western points, regardless of any rates made by canal lines from New York."

"Carried—9 ayes.

Grand Trunk declined to vote, but subsequently changed its vote to aye, making it unanimous.

"On further motion, it was agreed that the rates to be charged from Cleveland, Toledo, Detroit and points of lake and rail intersection, on west-bound freights, to be the full all-rail proportion of the above agreed rates from Buffalo.

"On motion, it was agreed by the Wabash, St. Louis & Pacific Railway to charge its proportion of the tariff, lake-and-rail rates, New York to Toledo, on business from Buffalo to Toledo proper, coming from canal or Buffalo local.

"Mr. Bird explained that on rates to Mississippi River points he could not charge his all-rail proportion from Toledo, but would maintain the same through rates from Buffalo, lake-and-rail via Toledo, as from Buffalo, lake-and-rail via Chicago, which was declared satisfactory.

"Moved by Mr. Bullard—

"That Mr. Porteous be requested to withdraw all authority given to any canal line to make rates in this city, for classified merchandise by canal, destined to Lake Michigan ports, and report to the adjourned meeting to-morrow."

"On motion, it was added to the same, that Mr. Bullard ascertain if the lake lines will not withdraw the canal and lake rates already issued, and report at same time.

"The tariff of the Great Western, Canada Southern, Lake Shore & Michigan Southern and Grand Trunk railways, dated May 1, 1881, attached hereto and made a part of this report, giving rates from Buffalo on various kinds of iron, was submitted, and the companies, parties to the same, agreed to accept the rates specified therein, on any and all the articles specified, which might be brought to that point by their Eastern connections.

"Mr. Porteous, of the Grand Trunk Railway, replied to Mr. Bullard's resolution stated that he had notified canal line agents at New York, his agent at Buffalo, and all other representatives of the Grand Trunk, as well as party alleged to hold reduced rates, that any rates given them less than those adopted by this committee would not be carried out by the Grand Trunk Railway, which explanation was accepted by the committee as satisfactory.

"Mr. Bullard stated that he had sent a long telegram to Messrs. Allen and Evans, at Buffalo, stating that the committee desired to know if they could abrogate and withdraw the published canal and lake rates, made to hold good until July 1, but as yet had not received a reply, but would report their answer to committee, full meeting, or Commis-

sioner.

"Mr. Bullard stated that in consideration of the action of the rail lines from Buffalo, he felt authorized, subject to the concurrence of Messrs. Allen and Evans, of which he will advise the Commissioner, to agree for the lake lines that if they cannot abrogate present rates before July 1, 1881, they will, on and after that date, charge from Buffalo on all classified merchandise received from canal not less than their full lake steam proportion of established rail and steam through rates.

"Touching the rates given via New London to the Province of Ontario, referred to this Committee, it is recommended that the full meeting refer that question to the Trunk Line Executive Committee, with power."

The above report was adopted.

The Chairman read the following telegram, from Mr. E. T. Evans, received in answer to the message sent by Mr. Bullard, above referred to:

"Your message of yesterday was received too late to answer last night. Mr. Allen and myself have gone over the matter very carefully this morning, and we think that while we would like very much to be able to advance our rates now, we are so committed that it will be impracticable to advance before July 1, on which day we will be very glad to make an advance."

REPORT ON REVISION OF PERCENTAGE TABLE.

The committee recommends that the basis for the rate from Cleveland and Carey, O., to seaboard points be not changed, and that the Chairman be requested to arrange with the Columbus & Ohio and the Ohio Central for making the rates from Berwick, O., 78 per cent. of the Chicago rate, and to apply the Carey rates to Alameda. Messrs. Skinner and Vaillant did not fully concur with regard to the Cleveland rates.

REPORT OF CHICAGO COMMITTEE.

Mr. Newell for this committee reported that it had arrived

at a conclusion regarding a basis for settling live stock balances, and had considered the settlement of freight balances, but needed further statements, and had postponed final action until these were obtained, when there was every prospect of a settlement.

REPORT OF THE ST. LOUIS COMMITTEE.

Mr. Bird, Chairman, reported that the Chicago & Alton Railroad was not represented, and, therefore, no decisive action could be taken. That a meeting would be called and action taken as soon as a full attendance could be obtained.

THE INDIANAPOLIS COMMITTEE.

The Chairman said that all the roads were not represented, and he could, therefore, make no report.

THE PEORIA COMMITTEE.

Mr. Diehl, Chairman, reported that the committee not having a full attendance, it was decided to adjourn their meeting to some future time, and until after the arbitrators had made their decision.

WITHDRAWAL OF EASTERN AGENTS FROM WEST OF THE MISSISSIPPI RIVER.

The Chairman laid before the meeting the request of the Southwestern Railway Association for the withdrawal of the Eastern agents from points west of the Mississippi River, and the subject was referred to the Trunk Line Executive Committee.

RATES FROM CHICAGO TO MONTREAL.

The subject was referred to the managers of the Chicago terminal roads.

REPORT OF THE LOUISVILLE COMMITTEE.

The Louisville committee reported on the question of subdivision of traffic from Louisville, that at this time it was impracticable for them to determine how the freight going from Louisville to Eastern points should be sub-divided after leaving the lines of the initial road. They were of the opinion that the subject should be taken up by the representatives of their connections, and proportions for such distribution first agreed upon by them.

RATE ON WOOL FROM INTERIOR POINTS IN MICHIGAN.

A committee was appointed to take this subject into consideration, to meet at Detroit as early as possible.

The following is the committee, with Mr. H. B. Ledyard as Chairman: H. B. Ledyard, J. B. Mulliken, C. B. Peck, H. C. Potter, T. Tandy, A. B. Leet, John Newell, G. B. Spriggs, John Porteous, W. H. Perry.

THE AGREEMENT OF MARCH 11.

The Chairman said, "I have asked Mr. Blanchard, before adjourning this meeting, to say a few words to you on the subject of the future policy of this committee, as defined by the agreement of March 11. I should be pleased to have him inform you as to the present relations of the trunk lines to each other."

Mr. Blanchard addressed the meeting at length. He first referred to the efforts made in the past by the trunk lines and the Western roads to strictly carry out the agreements for the maintenance of the established tariffs; and the many difficulties that stood in the way which prevented full success, although much has been accomplished. All these efforts had culminated at last in the agreement of March 11, which has been published in Circular 247. The presidents of the trunk lines, in their meeting held April 16, confirmed this agreement.

Mr. Blanchard proceeded to say that as far as his road was concerned, when they signed that agreement they signed it with the same good faith as that with which they would sign a contract, a check, a draft or a note; that it should be honored to the full extent of their power to honor it. And that agreement he understood to mean just what it says, and that it was now being carried out. He would be very glad if the representatives of the other trunk lines present would, as he had done, express their views in relation to the agreement of March 11.

THE CHAIRMAN—It has often been stated to me by Western roads that if rates are cut on east-bound business, the trunk lines are responsible for it; that the Western roads cannot help themselves, as they must adopt such rates as may be authorized by the trunk lines. All reforms in the conduct of this business must therefore commence with the trunk lines; you will, therefore, all be glad to have heard Mr. Blanchard's remarks. Some of the other representatives of the trunk lines are here, and they will no doubt also state their views on the subject.

Mr. RUTTER—As Mr. Blanchard states the case very clearly, we all agree with him, I do not know that it is necessary to say anything more. We entered into the agreement of March 11, and it has been confirmed by the presidents, and I assure you that we are all in earnest and desire to carry it out to the letter.

Mr. KING—I do not know that I can add anything to what has been said so well by Mr. Blanchard on this question. I can only say, with Mr. Rutter, that I am sure we are all in earnest. We made this agreement in perfect good faith, and mean to carry it out.

I can vouch for our company and all its connections. I think there is a better understanding among us all in the trunk lines than there has been at any time previous. I hope it will continue, and I think it will.

Mr. CREIGHTON—Mr. Blanchard has stated our views, and we propose to stand by the agreement.

THE CHAIRMAN—The representative of the Grand Trunk is not present, but I have the assurance from Mr. Sargeant that that company will faithfully carry out this agreement.

CLEARING HOUSE PROPOSED.

Mr. Blanchard gave notice that, at a future meeting, he would propose that the Commissioner's office be extended into a clearing house. He spoke of the advantages of such an institution, and wished to ascertain the views of the Committee on the subject. All the settlements growing out of through business, and the payment and distribution of balances, should be made through the clearing house, and all vouchers relating to all transactions of through lines to be recorded in the office of the Commissioner. This would check the difficulties that arise, and help to solve the problem by giving a full knowledge of all that is done, and restore confidence between the officers of the roads.

The meeting then adjourned.

Mr. Adams' Views of the Situation.

In a recent letter to *The Nation* Mr. F. B. Thurber made some remarks on the position of Mr. Charles Francis Adams, Jr., before and since he was a member of the railroad Board of Arbitration. Mr. Adams having replied Mr. Thurber rejoined, getting hopelessly confused in statements of net earnings, operating expenses, etc., to which Mr. Adams replied in last week's *Nation*; and with this gave what is much more interesting, namely, his opinion as to the present state of the question of the relation of the railroads to the community,

and the discussion thereon, and his own present position with regard to it, which has not been modified, as some have assumed, by his experience in the Board of Arbitration:

Referring to the quotation he makes from one of the reports signed by me as a railroad commissioner, Mr. Thurber further says:

"The above is not the only instance in which Mr. Adams has exhibited a short memory since he entered the service of the railroads. When the bills proposed by the Hepburn Committee for the prevention of railroad abuses were pending at Albany last winter Mr. Adams was quoted on both sides of the same question, and one of the speakers, in commenting on this fact, stated that Mr. Adams had graduated from a Massachusetts railway commission at four thousand dollars per year into a pool-line commissioner at ten thousand dollars per year, and as a commissioner of the pooled lines he entertained very different views from those he advocated when chairman of the Board of Railway Commissioners of the State of Massachusetts."

Passing by the question of taste involved in this style of discussion, I have only to confess that, during the years I have been investigating the railroad question, I have seen occasion to modify my views very frequently. I hope for quite a number of years to come, in the light of a larger knowledge and experience, to modify them still further from time to time. Whenever I do thus modify them, also, I propose on proper occasions to acknowledge the fact. Heretofore, I believe I have not failed to do so. Sticking for consistency's sake to a wrong opinion, after you come to see it is wrong, is kind of lying, which is common enough; but I can't say I admire it. Meanwhile, I am not aware of any particular change my opinions have undergone since, as Mr. Thurber is pleased to express it, I "entered the service of the railroads." On the contrary, I have, while in that service, been very strongly confirmed in the views I had previously entertained, and, as Mr. Thurber very well knows, openly expressed. I have, however, seen the thing from the other side.

Since I have begun confessing, perhaps I may as well go on; what I have to say may possibly interest other of your readers, as well as Mr. Thurber. What is called the railroad problem seems to me, more now than ever before, a thing perfectly easy of solution; and yet one the practical solution of which is, under existing circumstances, hardly to be hoped for. The difficulties in the way are very obvious. Our laws, the political catch-words which outweigh all argument, and an uninformed public opinion, do not allow the railroad system to follow out quietly its natural course of development, subject to an intelligent restraint when that development runs into essential abuses. We are always pounding away at it, it is true, but generally after a crazy, mistaken fashion, or on some false or quite immaterial issue. The weak points of the system are not commonly known; the patience necessary to find them out is looked upon as a sign of timidity or treachery; and thus every attempt at dealing with a really great and intricate subject assumes, soon or late, the form of a new, quack, curæl legislative pill. Now, in dealing with the railroad corporations of this country, the passionate denunciation in which the orators of the Anti-Monopoly League are wont to indulge is not going to accomplish much. Neither will the ignorant and vindictive legislation to which doubtless that denunciation will lead. That these will accomplish something I would not seem to deny. So, perhaps, would a mob hooting and throwing bricks at a fortress. They would, at least, break any windows there might happen to be about; and, perchance, might bruise some of the garrison. That they would cause the place to surrender is possible, but highly improbable. That would call for a trained force and a siege. So it is with the railroad question. What is needed, it seems to me, is the continuous pressure, and the steady building up of legislation, which can only come through the employment of trained specialists—a class politically despised, but of which the railroads avail themselves with good results to them.

Such are the present situation and outlook, as I see them. Mr. Thurber says, very frankly and characteristically, that my habit is to shape my opinions to meet the views of my employers for the time being—whether the public or the railroads. It is, perhaps, natural enough that he should think so, and I am not going to fall scolding on that score. As respects the railroad position I now hold, however, I will freely acknowledge one thing: I accepted it in the hope of doing something toward remedying certain glaring and notorious abuses in our system of railroad transportation. I refer especially to discriminations and fluctuations in rates. My efforts in that direction have met with only a very modified degree of success, and have not, it seems to me, been of great value to my employers. I should consequently have severed the connection long ago had not my friend Colonel Fink, who is really doing a work of vast public value, over-persuaded me. The fact is, however, that I am so far from wishing to have any "employers" at all, or caring for their opinions, that there is but one possible position connected with the working out of this railroad problem which I covet. I should like for the next ten years to represent the United States officially in the discussion which ought to take place; just as, during ten of the last twelve years, I represented Massachusetts. There would then be, so far as I, at least, should be concerned, no terrible grapple with a great monopoly—no life-and-death struggle for popular liberty—nothing, I fancy, even remotely resembling that sort of thing. There would, though, be a good many tedious investigations—a great deal of rather intricate discussion—the gradual exposure of a large number of abuses; and, finally, some very prosaic suggestions of laws calculated to correct them. It seems to me blood and thunder is a little out of place here, though I dare say it may serve its purpose for a party leader almost in despair in his long hunt after a taking political issue.

I have no idea that either through myself, or any others more or less competent than I, the course I have indicated will be pursued. The dislike and distrust, not to say the contempt, felt for all specialists and specialist work in our political circles is so marked that it is ten to one the country will have to wallow through this difficulty, as it has wallowed through so many others. Fortunately it is strong, and, when it comes to wallowing, has an enormous staying power. The process, however, is not an edifying one. But, as things are now going, it is the railroads themselves which will force an issue of the railroad problem. In doing so, however, they would be much aided by a stronger and more wisely-directed Government action. Indeed, their chief present difficulty is that the outside pressure, at once intelligent and constant, which would compel the correction of those internal public abuses of their system from which they are themselves the greatest sufferers—this healthy outside pressure they do not now feel. Consequently, they are apt to run riot.

They also, however, will doubtless wallow through somehow. Meanwhile, the net result of that "graduation" of mine from one side to the other of this issue, to which Mr. Thurber so pleasantly refers, has been to afford me, at any rate, a new illustration of old Oxenstiern's famous aphorism in regard to the amount of wisdom with which the world is governed. That, perhaps, is not much to get after going so far; but it is something.



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EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed to EDITOR RAILROAD GAZETTE.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns our own opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

THE LAKE SHORE REPORT.

The clear and comprehensive statements of the President's report exhibit so well both the result of the last year's operations of this road and its progress since its origin that much of the illustration that we are accustomed to produce in commenting on railroad reports is quite superfluous. Traffic, earnings and expenses are given not only for the past two years, but for the eleven years since the consolidation which formed the present company.

The comparison of 1880 with 1879 shows an increase of 24.8 per cent. in passenger traffic and of 6.8 per cent. in freight traffic, carried with an increase of 15.5 per cent. in working expenses, but yielding 22.8 per cent. more gross earnings, and an increase of \$1,904,388, or 31½ per cent., in net earnings—truly an enormous increase in profits to be made in a single year, and equal to very nearly 4 per cent. on this company's large capital stock.

The tables show that the freight traffic was larger in 1880 than in any previous year, and the passenger traffic larger than in any other year except 1873. The amount of increase in freight traffic from 1879 to 1880, however, was less than in recent years, while the increase in passenger traffic is much the largest ever made in a single year; and comes after three years of the lightest passenger traffic the road has ever had. Since 1875 the increase or decrease and its percentage from the previous year in both freight and passenger mileage have been:

	Ton-miles.	P. c.	Passenger-miles.	P. c.
1875 to 1876.....	Inc. 190,597,667	20.2	Inc. 10,559,640	6.0
1876 to 1877.....	Dec. 53,829,267	4.8	Dec. 37,393,883	21.3
1877 to 1878.....	Inc. 230,462,260	24.1	Dec. 4,414,597	5.2
1878 to 1879.....	Inc. 382,955,619	29.3	Inc. 7,460,296	5.6
1879 to 1880	Inc. 117,742,578	6.8	Inc. 34,986,450	24.8

Therefore, so far as traffic is concerned, 1880 is distinguished by a comparatively small increase in freight and an altogether unexampled increase in passengers,

the latter more than anything else indicating general prosperity among the people, though very largely due to immigration.

This feature of a large increase in passenger traffic and a more moderate one in freight traffic than has been common of recent years seems, however, to have been common in 1880 on roads with trunk-line traffic—as on very many others which contribute this traffic. Thus the percentage of the increase in the two branches of traffic on several roads has been as follows from 1879 to 1880, except that for the Erie and the New York Central the years are those ending with September :

	Ton-miles.	P. c.	Passenger-miles.	P. c.
Lake Shore.....	Inc. 6.8	per cent.	Inc. 4.8	per cent.
Pennsylvania.....	8.6	"	21.8	"
N. Y., Penn. & Ohio.....	None	"	27.7	"
Clev., Col., Cin., & Ind.....	4.8	"	18.5	"
New York Central.....	10.0	"	13.7	"
N. Y., Lake Erie & West.....	9.7	"	21.0	"

If the report of the New York Central were for the calendar year, doubtless its increase in passenger traffic would be considerably greater. Its passenger traffic did not begin to increase much until January, 1880. But as it is, we see everywhere here that the gain in passenger traffic has been much larger than that in freight. The latter in most countries would be considered large, but it falls much below what had been common on our railroads of late years. Of course, increases of 25 per cent. per year could not possibly continue forever, or for many years in succession; and it must be remembered that the great increases before 1880 were made with, and largely by, rapidly decreasing rates; while the moderate increase of 1880 was made with a general increase in the average freight rate.

A further indication of the general prosperity of the country, causing people to spend freely as well as to produce largely, is in the increase of the freight traffic in the two directions. East-bound freight chiefly consists in Western produce sent for consumption in the East or Europe; while the Western merchandise consumption is west-bound freight. One of the most interesting tables of the Lake Shore report is that which gives the tons, ton-miles, earnings and average earnings per ton per mile of east and west-bound freight separately for eleven years. Now, heretofore, when there has been an increase in freight traffic it has been mostly in east-bound freight. Since shipments of anthracite coal in grain cars have been made on a large scale, it is true there has been a great increase in west-bound freight; yet from 1877 to 1878, out of a total increase of 260,000,000 ton-miles, less than 18,000,000 were west-bound; in 1879, when the total increase was 393,000,000, no less than 191,000,000—nearly half—was west-bound; but last year there was actually a decrease of 18,000,000 ton-miles in east-bound freight, while there was an increase of 135,000,000, or 25 per cent., in west-bound. The west-bound tonnage, which as late as 1878 was only 25.8 per cent. of the whole, in 1880 had become 39.2 per cent. The great advantage of this greater evenness of movement in reducing the average expense per ton per mile need not be enlarged upon. In 1878 the average train-load east-bound was 308 tons, but the west-bound freight afforded only 107 tons for each returning train. In 1880 the average train-load east was 315 tons, but there was enough freight in the other direction to make an average load of 180 tons. Thus while the maximum train-load has remained nearly the same, the average train-load has increased from 207 tons in 1878, and 231 in 1779, to 247½ tons in 1880—the largest that we remember to have seen reported for any road in the country, though there are several that take much larger maximum train-loads (using more powerful engines) than the Lake Shore. In this connection we should bear in mind that the average rate on east-bound freight was no less than 25 per cent. higher than in 1879 and 11 per cent. higher than in 1878. That the traffic should have remained so large in the face of this great advance from the utterly inadequate rate of 1879 is remarkable. On the west-bound traffic, which increased so greatly, there was the small advance of 2 per cent. in the rate. The average rate in the two directions was nearly the same (0.747 cent east and 0.756 west). Heretofore the average west-bound rate has been considerably the higher.

These facts, that there was in 1880 a considerable advance in east-bound rates, and that the west-bound traffic did not grow or grew very little, we may accept as general, and also as having a connection with each other. There is no doubt that traffic will grow faster if the roads carry for less than cost, especially on such roads as the Lake Shore, which compete for a large share of their freight with cheap lake transportation. We cannot adduce many instances, because few roads report the movement east and west separately. The Cleveland, Columbus, Cincinnati & Indianapolis, however, with an increase in the average east-bound rate

from 0.629 to 0.747 cent, had an increase of but 1 per cent. in east-bound freight, and in through east-bound freight, the rate on which increased 28 per cent., there was a decrease of 7½ per cent.

Vast as has been the increase of east-bound freight on the Lake Shore, amounting since 1870 to 186 per cent. and since 1873 to 53 per cent., the west-bound has now outstripped it in rate, its increase being 345 per cent. since 1870 and 187 per cent. since 1873. Yet nearly seven-eighths of the whole increase in west-bound freight since 1873 has been made since 1878. It is mostly due to the carriage of coal in grain cars in competition with the lakes, but to no small extent the increase last year was on account of a larger consumption in the West, which in such matters as railroad iron and supplies was immense, while great in ordinary merchandise for domestic consumption. A table of the different leading items of freight in successive years shows that the tons of coal carried increased from 717,428 tons in 1878 to 1,052,571 in 1879 and 1,239,098 in 1880. Iron, which amounted to 227,523 tons in 1878 and 382,566 in 1879, was 636,647 in 1880. On the other hand, the petroleum carried, which attained its maximum of 755,952 tons in 1877, has declined rapidly every year since to 327,953 in 1880—just about balancing the increase in iron.

The statement of passenger traffic in successive years gives the through and way movement separately, but only passengers over the whole length of the line between Chicago and Buffalo are counted as through, thus excluding the large Cincinnati, St. Louis, etc., business, which is done by this road via Cleveland and Toledo. The number of passengers of every class (first, second and emigrant) is also given. With this distinction between through and way, it appears that about three-fifths of the increase of passenger miles since 1879 was in way traffic, but the rate of increase was 41 per cent. in through and 20 per cent. in way. The through (Buffalo-Chicago) emigrant traffic increased no less than 145 per cent., and formed nearly one-fourth of this through traffic. As the emigrant traffic is all west-bound, and the other passenger traffic is nearly equal in the two directions, it is probable that the emigrants were nearly two-fifths of the whole number of passengers carried from Buffalo to Chicago. A still larger number of emigrants is counted as "way," most of them, doubtless, going as far as Cleveland or Toledo. But, excluding these, the increase in those going from Buffalo to Chicago made 19 per cent. of the whole increase in passenger mileage. The great emigrant traffic brought down the average through passenger rate from 1.79 to 1.53 cents per mile, the way rate remaining unchanged at 2.35 cents.

With this definition of way travel, 26 per cent. of the road's passenger business is through.

Of the Lake Shore's great gain of nearly \$3,500,000 in gross earnings, \$623,000 was from passengers and \$2,789,000 from freight. And of the increase in freight earnings, \$2,055,000 was due to the higher average rate. The average cost per ton per mile, in spite of the larger train-loads, increased from 0.398 to 0.435 cent, and if only the rate of 1879 had been received the company's profits from freight would have been but \$3,831,913, instead of \$5,831,173, and there would have been no increase in net earnings, instead of the addition of nearly \$2,000,000. We do not see what could show more clearly the immense advantage of maintaining rates. The whole improvement of this and many other roads was due to this in 1880. It is true that there was a handsome gain in the profits from passenger traffic, but because of the higher working expenses there would have been a considerable decrease in freight earnings if the freight had been carried at the rate of 1879. So much depends on the seemingly trifling difference between 0.642 and 0.750 cent in the average rate per ton per mile.

UNIFORMITY OF ROLLING STOCK.

The discussion of this subject has long since passed beyond the condition in which it is essential to show that the diversity of rolling stock is a great evil. All experienced car-builders and superintendents of machinery admit that fact. The question now is, how to remedy the evil. As the Master Mechanics' and Master Car-Builders' associations will soon meet, we have ventured to take up this well-worn subject again.

It may be said, generally, that after a certain period in the discussion of an evil and its reform, the latter is not promoted by dwelling on the magnitude of the former. Those who are interested in the matter soon become familiar with its extent, and then the continued reiteration of the harm which is done rather disposes those who hear it too often to submit to the endurance of what is made to appear irremediable. The frequent agitation of the question of uniformity of railroad equipment has had somewhat of this effect

in the minds of some railroad men. To the arguments advanced they are inclined to answer: "What you say is in a great measure true, but we are operating our roads, doing an immense business and earning good dividends, although our rolling stock and that of other roads is very far from being uniform in construction. Altogether we would rather endure the inconvenience arising from that cause than to listen to all you say or read all your articles and reports about it." Unconsciously, perhaps, this is the state of mind of a good many railroad managers, who at the same time appreciate the great advantages which would result if the different parts of cars, especially those which require frequent renewal, were made alike.

It should be kept in mind, too, that the adoption of standards is a matter of development to a very great degree, and not merely what a great many master mechanics and car-builders seem to think it is, a mere agreement to abide by a counting of ballots. There may be such a thing as a premature adoption of standards; that is, certain forms and types of construction may be recommended which are still in an undeveloped state, and which a few years' experience and the stimulating influence of competitive invention may show to be inadequate to fulfill the purpose for which they are used, and much less effective than later devices which have been more completely developed. After a time nearly all mechanical construction reaches a sort of stationary stage, in which no material change of form occurs until some discovery or invention modifies the limitations which have determined its plan and character. This was the case with car axles at the time that the master car-builders' standard axle was adopted. All over the country, and in fact in all parts of the world, they had assumed a certain definite form. They differed from each other only in the proportions of the parts. At the time the subject was up for consideration, one of the committees which reported on it made up a table containing the dimensions of 105 different kinds of standard axles in use, which differed from each other only to a very slight extent. It would have been immaterial, almost, which of these axles had been selected, excepting that the tendency to increase the weight of rolling stock gave to the larger axles an advantage over the smaller sizes. When the art of axle making had reached this stage the time had come for adopting a standard. Happily, too, a majority of the members of the Master Car-Builders' Association saw the importance of adopting a large axle at a time when the tendency was (as it still is) to increase the weight of rolling stock. The standard dimensions then adopted were somewhat in advance of the practice of the time, so much so that a few years afterward it led to a reconsideration of the whole subject; but by that time the opinions of those who acted on the matter had been modified by the progress of events, and they unanimously re-affirmed the first action of the Car-Builders' Association.

To show that standards may be adopted prematurely the case of the journal-box cover which was recommended by a committee of the same Association may be referred to. This, it is now very generally agreed, is a very poor form of cover, and the committees to whom the subject was referred last year will probably advise that the action of their predecessors, so far as it referred to covers, be repealed. When the standard was adopted journal-box covers were, and they are perhaps still, in a comparatively undeveloped state, so much so that it is questionable whether it would be wise to recommend any one of the numerous forms in use until many of them disappear by a process of the survival of the fittest.

The adoption of standards must, therefore, always lag somewhat behind experience, and until the latter has indicated in some indubitable way what is unquestionably the best form for a given part of a car or engine, it will be unwise to tie practice to a given standard, which may afterward appear to be very far from being the best one that could have been selected, if action had only been delayed a little longer. Two things are required to bring a standard into general use: One is that it should be the best, or as good as any of its kind, the next that it should have the authority of some organization representing in some way the railroad companies or their officers. Neither the quality nor the authority of a standard will secure its introduction. In Mr. Holley's paper on standard rail sections, read at the late meeting of the Institute of Mining Engineers, he showed very clearly that the forms for the sections which he proposed as standards were as good as, if not the best of, any in use. Few railroad engineers will question this, yet there does not seem the slightest probability now that they will be generally adopted by the railroads in the country. They lack the authority of an association of those who decide such matters, and until they receive this there is not

much hope that those who aspire for distinction by taking off a sixteenth at one place and adding a thirty-second somewhere else to a rail section will stay their efforts at achieving immortality. Mr. Holley's sections form an example of a good thing without authority, the journal-box cover a case of an authorized defective thing. Neither will probably ever come into general use.

There can be little doubt, too, that the difficulty of having a common standard adopted for any part of a car is materially increased when there is a number of patented forms for that part. There is, in the first place, a fundamental objection to recommending the use of a patented device, for the reason that no one has the right to use it without the consent of the patentee. There is, therefore, a manifest impropriety in any association's binding, by a resolution of recommendation, those whose interests they represent to use a patented article for which the patentee would thus be placed in a position to exact a higher compensation than he could expect to obtain without the authority of such action. Another difficulty which the patents interpose in the way of the introduction of a standard is, that to fix on any one of them means the exclusion of all the rest. Consequently the interests of all the excluded ones are enlisted against the adoption of the one selected. The way in which interests in patents are interlaced with the duties, which should be undivided, of railroad officers to their employers will not be discussed here. It may be said though that it does not always promote that complete disinterestedness of mind which is essential in judging what are the true interests of those by whom such officers are paid for the latter kind of service; and, consequently, when the question of the selection of a standard from among a number of patented articles comes up, various stumbling blocks are apt to be encountered. At any rate, all the various interests in the patents on those things not recommended as standards are arrayed against the selection of the one which has the most merit. For these and other reasons the policy heretofore followed by the Car-Builders' Association of *not* recommending, as a standard, anything which is patented, seems to be a wise one.

From what has been said it will be seen that the adoption of standards for the construction of railroad rolling stock must, necessarily, be a slow process. The standard height of draw-bar is now very generally in use, and the standard axle has been adopted on more roads within the past two years than ever before. It is expected that the standard journal-box, journal-bearing and pedestal will be put into such a form at the meetings this spring as to commend themselves to all railroad officers who are using the standard axle. Once these are recognized as standards it will be a comparatively simple thing to adapt the other portions of the truck to them, and it may be expected that this will be the next step to be taken. Certain general dimensions of draw-bars, other than their height, have also been adopted, but no drawing to illustrate them has ever been published, and we are inclined to believe that it would not be easy to tell precisely what has been recommended and what has not been. A move has also been made to fix upon a standard brake-shoe, and there will probably be a report made on the subject at the meeting this year. The fact that there are patents on a considerable number of the brake-shoes will probably be an obstacle in the way of agreeing on a standard, for the reasons given above. It seems absurd though that there should be nearly a hundred different forms of brake-shoes, all standards, too, in use on the various lines. Such is the fact, however.

It will be seen that progress is slowly being made in this direction, and that what has already been done is quite sure to have a cumulative effect, and even if no other action should be taken hereafter the tendency of what has been done is quite certain to lead to still other improvements.

It is important though to call the attention of railroad managers to the fact that the only means which now exists for securing uniformity of rolling-stock among the different roads is through the Master Mechanics' and Master Car-Builders' associations. There are no other organizations for that purpose, and no prospect of there being any. Those named may not be all they should be, but they are the best we have. The part of wisdom would therefore seem to be to give them every aid possible instead of assuming a sort of repressive attitude toward them. After a number of years of experience, and a somewhat intimate knowledge of the proceedings of these associations, we express the opinion, unhesitatingly, that all railroad companies would find it to their advantage to send one or more representatives to the annual meetings of these associations.

The Lake Shore and the Wabash.

There has been considerable speculation of late—as there has been heretofore from time to time for many years—on the effect of the diversion of the Wabash traffic from the Lake Shore road at Toledo by that road's finding or building another eastern outlet under its own control. The traffic interchanged between these roads at Toledo is no doubt very large, and the profit on it considerable when rates are maintained as they were last year; but there is a tendency to exaggerate them. The Lake Shore report shows that the total freight received by it at Toledo, in 1880, was 885,162 tons, the gross earnings on which were \$1,252,711. Now, Toledo is not only the terminus of the Wabash, but of the Dayton & Michigan, the Columbus & Toledo, the Flint & Pere Marquette, the Canada Southern, the Ohio Central, and of some less important roads—all of which must have brought the Lake Shore some freight, while as a lake port it receives a great deal of lumber and coal, a large part of which the Lake Shore doubtless gets. Further, Toledo of itself is a great grain market. The Wabash grain does not all pass directly through it, by any means, but much of it is sold and stored there for a time; and when stored it is beyond the control of the road which brought it there. The earnings on the freight forwarded from Toledo are but about one-third of the earnings from the Chicago shipments over the Lake Shore, and one-half those of the Cleveland shipments, and five-eighths of the earnings on Buffalo shipments. A new outlet to the Wabash, however, will take part of the freight which the Lake Shore delivers to the Wabash at Toledo and also some of the passenger traffic, though these, and especially the passenger traffic, a Western road cannot control to anything like the extent that it can determine the route of its east-bound freight. A railroad, it must be remembered, cannot usually divert its traffic wholly from one line to another with advantage to itself. It receives as well as gives business, and cannot expect to receive from a connection to which it gives nothing. We have noticed heretofore that the Pennsylvania's leased Pittsburgh, Cincinnati & St. Louis road into Chicago carries more freight for the Erie than for the Pennsylvania; another example is the Lake Shore itself, which sometimes delivers to the Erie more than a third of the freight it receives at Chicago for New York, and to the Pennsylvania an eighth, leaving to the New York Central, whose President controls the Lake Shore, little more than half. The Michigan Central, too, gives to the Erie half as much New York freight from Chicago as to the New York Central, and to the Grand Trunk a very considerable portion of its Boston freight, and we remember how, when the Canada Southern became a Vanderbilt road, half the Michigan Central freight still went by the Great Western.

A new outlet to the Wabash will, however, certainly take *some* traffic from the Lake Shore; and this time it certainly is going to have a new outlet, and that very soon. We do not refer to the plans, which may not come to anything, for a new line south of Lake Erie to New York, but to the Detroit & Butler line, now nearly completed, which will give the Wabash direct connections with the Great Western and the Grand Trunk at Detroit. With the Great Western it has certainly made a contract for hauling its cars between Detroit and Buffalo—and if report says true, at such a very low rate that the connection will be better than a road of its own, and, as it is to pay a fixed sum for the service, it will have the same power as any other road to make rates between Buffalo and the various Western points that it reaches. With this road to Detroit, it will be bound to send some freight there; how much will depend, doubtless, much on the profitability to it of shipments by that route in comparisons with shipments to Toledo. There is substantially no difference in the length of the routes; but if the contract with the Great Western gives the Wabash more profit than it can get by pro-rating with the Lake Shore, it will doubtless send as much as it can by Detroit. That the diversion will make a great difference in Lake Shore earnings, however, is not to be expected.

THE NORTHWESTERN GRAIN MOVEMENT, that is, the deliveries from the farmers to be carried by the railroads, either through to the sea-board or to the great Northwestern markets to be stored till the opening of lake navigation, we would expect to be a much smaller proportion of the stock on hand than last winter and most other winters, because, in the first place, the roads have been so blockaded by snow that the farmers have not been able to haul loads to their stations most of the time, and second, because these same snow blockades have also prevented the railroads from hauling as much as usual. The statistics show, indeed, that down to April 23, the total grain receipts of the seven Northwestern markets had been

about 48,000,000 bushels this year, against 58,000,000 bushels last year, though nearly 4,500,000 bushels of the decrease of 10,000,000 was made up by an increase in flour receipts. And if we take Chicago and Milwaukee by themselves, which have suffered most by the blockades, we find a decrease from 27,000,000 to 20,300,000 bushels in grain receipts, but an increase in flour receipts equivalent to 6,360,000 bushels of grain—that is, the receipts of flour and grain together have been substantially as great this year as last at the two markets whose lines of supply have been most interrupted. We suppose there can be no doubt, however, that there was a much greater production last year than the year before, and if so, we should expect to see the excess come forward between this time and the spring wheat harvest next August.

The April receipts at Chicago and Milwaukee (flour and grain together) were 21 per cent. more this year than last, but April receipts were unusually light last year, though for a very different reason than that which has operated this year. Last year there were enormous receipts in March, and the spring being very early, farmers were too busy in April putting in crops to spend time marketing grain. This year the frost was not out of the ground most of April in the Northwest, and though farm work was not practicable, neither were the roads; and the grain which came forward last year so freely partly in March and afterwards in May must still be largely in the farmer's hands, and as they will be driven with spring work throughout May, because of the lateness of the season, it is probable that the May movement also will be much lighter than last year's, but that there will be an extraordinarily heavy movement later in the season, at least from that part of the country where the snow blockades lasted into April, say all the Northwest as far north as Chicago and Omaha. The stock of wheat in farmer's hands may not be very large; only what of it they had last fall they have still to a great extent; they were not able to market it to anything like the same extent as last year during the winter and spring.

PENNSYLVANIA RAILROAD EARNINGS IN MARCH were not only much larger (17½ per cent.) than in the corresponding month last year, but they were the largest the road has ever had in any month except last October since the Centennial traffic was heaviest, and the gain is the largest that the road has made for many months. The increase in expenses is considerable—16 per cent.—but the net earnings are 19 per cent. larger than last year, and are among the largest ever made by the company in one month. They are the more noticeable because in the two previous months there was a considerable decrease in net earnings. For the past six years the gross earnings, working expenses and net earnings in the month of March have been:

	Gross earnings.	Working expenses.	Net earnings.
1876	\$2,662,897	2,033,222	\$630,675
1877	2,410,804	1,517,168	893,636
1878	2,499,286	1,531,448	967,838
1879	2,603,067	1,615,844	987,223
1880	3,278,186	1,766,938	1,511,248
1881	3,844,304	2,045,073	1,799,220

Thus March was an exceptionally favorable month last year, and if we compare last March with the month in 1879 we find that the increase has been 48 per cent. in gross and 82 per cent. in net earnings.

Heretofore, since September, as we pointed out last week, the Pennsylvania's monthly earnings have been pretty nearly parallel with the New York Central's; but the latter had a considerable decrease in March, when the Pennsylvania's increase was greatest, though in March, 1880, the two had an increase and nearly the same increase over March, 1879. (The New York Central 15.4 and the Pennsylvania 16 per cent.) This indicates that it was special and not general causes that caused the New York Central's decrease.

This increase in working expenses is probably due chiefly to increased traffic and the larger maintenance expenses caused by the severe winter. March was the month when the wages of employés were advanced last year, and for train-men, etc., wages were thus the same both years. The men employed in shops and common laborers, however, have their wages regulated chiefly by the prices paid in their trades outside of the railroads, and we believe they are generally getting more now than they did a year ago.

For the three months ending with March the gross earnings, expenses and net earnings have been, for five years:

	1877	1878	1879	1880	1881
	\$6,960,070	\$4,635,058	\$2,325,012		
	7,058,492	4,467,754	2,590,738		
	7,684,532	4,504,991	3,179,541		
	9,306,314	5,196,786	4,100,528		
	10,129,134	5,965,143	4,163,991		

The increase compared with last year has been 9 per cent. in gross earnings, 15 per cent. in expenses, and only 1½ per cent. in net earnings. Since 1879, however, the increase has been 32 per cent. in gross earnings, 32½ per cent. in expenses, and 30½ per cent. in net earnings.

During this quarter of the year the gross earnings of the Pennsylvania and the New York Central compare as follows (the Pennsylvania has about 85 per cent. more road than the Central):

	1881.	1880.	Ine. or Dec.	P. c.
Pennsylvania	\$10,129,134	\$9,306,314	I. \$822,820	8.8
New York Central	7,366,426	7,765,679	D. 349,253	5.1

From 1879 to 1880 the changes were:

	1880.	1879.	Increase.	P. c.
Pennsylvania	\$9,306,314	\$7,684,532	\$1,621,782	21.1
New York Central	7,765,679	6,709,508	1,056,171	15.7

The increase of the Central was not quite in the same proportion as that of the Pennsylvania from 1879 to 1880, but it was so great that we should not have expected it to lose even as little as 5 per cent. in a quarter, when the Pennsylvania gained nearly 9 per cent., were it not that the bad weather of the winter doubtless diverted considerable traffic, especially passenger traffic, from the north to the more southern route.

FOREIGN IMMIGRATION has already become enormous; and the steamers are now, we believe, bringing over as many as any time last year, though it is rather early yet; and for the whole year down to this time the arrivals are vastly greater than last year or any other year. For the first four months of the year the arrivals at Castle Garden have been:

	1881.	1880.
January	8,082	5,677
February	9,753	7,904
March	27,708	21,094
April	60,000	45,578
Total	105,543	80,253

an increase of 31 per cent., though the arrivals were extraordinarily large last year. So much new country was opened to occupation by the construction of new railroads last year that this immigration will doubtless at once be absorbed, so that the addition of three-quarters of a million of people in a year (should there be so many), though mostly adults, will hardly be felt. It is true that comparatively a small proportion of the immigrants go to the Far West, and that the new states and territories are and always have been first settled chiefly by natives migrating from the older states, Americans having an aptitude for hunting up places where land is good and cheap and likely when occupied to rise greatly in market value; and when one has found such a place, he writes back and is followed by friends and neighbors, and they by other friends and neighbors, who make haste to secure a farm while the land is cheap. But the immigrants to a great extent take the place of these emigrating Americans—that is, they do the work in the older states that these people who have left them were accustomed to do. With the enormous amount of railroad construction laid out for this year, there would be danger of something like a labor famine if the immigration were not so large; and labor seems not to be very plenty even now, when the season has not fairly opened.

LAKE NAVIGATION may be open now any day, the condition of the ice in the Straits of Mackinac being such that a few hours of favorable weather will break it up and clear a passage. The prospect for good rates at the opening is not as good as it was. There is not nearly so much grain in store at the upper lake ports as there was at the opening last year, and a few days ago most of the great fleet of vessels awaiting the opening at Chicago and Milwaukee were still light and unchartered. At Chicago last week 40 vessels, carrying about 1,515,000 bushels, were loaded or chartered, and 58 vessels, with capacity for 1,924,000 bushels, were still unchartered. At Milwaukee only five vessels, carrying 133,000 bushels, were loaded, while 27 vessels, with capacity for 857,000 bushels, were unchartered. A few charters were made last week, but the terms were not made public. Vessel owners were asking 6 cents a bushel for corn from Chicago to Buffalo, but shippers would not offer more than 5 cents, and it is probable that the charters made were on the basis of the latter rate. The opening rate last year was 6 cents on corn, and this fell off about a cent a week for three weeks, but afterward advanced, as the tremendous May receipts from the country came in. The corresponding receipts this year will probably not come before June, and meanwhile it looks as if the grain vessels might find business a trifle dull. The railroads successfully maintained the 30 cent rate last year through this early depression in lake rates, and probably they can do it this year, though very likely with light grain shipments until the farmers have got through their spring work so as to have time to market their grain.

WE are shocked by a report that the Baron Max Maria von Weber, an attaché of the Prussian Ministry of Public Works, who visited this country last summer to report upon our narrow-gauge railroads and improved water ways, died suddenly of heart disease in Berlin April 19. Only the day before a letter from him was received at the *Railroad Gazette* office, together with copies of two very striking lectures which he delivered last winter in Berlin, one on the physiognomy of the railroad systems in different countries and the other on the transportation of food materials and its relation to the progress of civilization. The telegraphic report gave the name as Philip von Weber, but the mail advices speak of the career of the son of the great composer in terms which leave little hope that there can be any mistake in the person. At the time he wrote he had not completed his report, and was still seeking for information, but the report of his death says that it occurred "a few hours after finishing his *magnum opus*, a book on canals." He had been sent by his government at different times to England, the Scandinavian countries and the United States to report on their canals, but we had not heard that he contemplated any other work on them than an official report.

CHICAGO GRAIN SHIPMENTS, which for a week or more ending with April 26 were exceptionally heavy for the season, the reason for which we intimated last week was the carrying it at 25 cents per 100 lbs., instead of 30, until 10 days after notice of the advance (notwithstanding that it was voted to advance immediately and without such notice), fell off largely after the 26th. On that day they were about 450,000 bushels, on the 27th, 270,000, and on the 28th, 222,000. They have grown somewhat larger since, but not so large as before the 27th.

THE ERIE CANAL will be opened from Buffalo east over the western and middle divisions May 17, and over the Eastern Division May 12, when also the Champlain Canal will be opened. Last year the opening was April 20, or four weeks earlier. The late opening will limit considerably the amount of freight that can be carried by the canal during the season. Last year's opening, however, was exceptionally early.

THE AMERICAN SOCIETY OF CIVIL ENGINEERS, which has for some years had its headquarters at No. 104 East Twentieth street, New York, has purchased a house of its own at No. 127 East Twenty-third street, just west of Lexington avenue, and will be at home there hereafter.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:

Chicago, Milwaukee & St. Paul, annual meeting, in Milwaukee, June 4.

Illinois Central, annual meeting, in Chicago, May 25.

Technical Conventions.

The Railway Purchasing Agents' Association will hold its annual meeting in St. Louis, May 17.

The Car Accountants' Association will hold its annual convention at the Grand Hotel in Cincinnati, May 25.

The Master Mechanics' Association will hold its fourteenth annual convention in Providence, R. I., beginning Tuesday, June 14. Headquarters for members will be at Narragansett Hotel.

The Master Car-Builders' Association will hold its fifteenth annual convention in the city of New York, beginning June 14.

The American Society of Civil Engineers will hold its thirteenth annual convention in Montreal, Canada, beginning June 15.

Dividends.

Dividends have been declared as follows:

Pullman Palace Car Co., the 56th quarterly dividend, 2 per cent., payable May 16.

Foreclosure Sale.

In pursuance of a decree of the United States Court at Indianapolis, the *Fort Wayne, Muncie & Cincinnati Railroad*, from Fort Wayne, Ind., to Connersville, a distance of 108 miles, will be sold at public auction at Fort Wayne, Ind., on Wednesday, July 27, 1881. The road is to be sold as an entirety, without appraisement, etc.

ELECTIONS AND APPOINTMENTS.

Allegheny Valley.—The directors at a meeting in Pittsburgh, April 27, re-elected all the officers, namely, John Scott, President; T. R. Robinson, Secretary and Treasurer; T. F. Brown, Auditor; David McCargo, General Superintendent; Thomas M. King, Superintendent River Division; C. A. Jackson, Superintendent Low Grade Division; E. H. Utley, General Freight Agent.

Baltimore & Ohio.—The stockholders of the following railroads under control of the Pittsburgh company held their annual meetings May 2, and elected the appended list of officers and directors: *Somerset & Cambria*—President, J. B. Washington; directors, W. H. Koontz, Somerset, Pa.; Welty McCullough, Greensburg, Pa.; J. G. Harvey, Robert Garrett, Baltimore, Md.; D. J. Morrell, Johnstown, Pa.; *Berlin Railroad*—President, J. B. Washington; directors, Welty McCullough, Greensburg, Pa.; Robert Garrett, Joshua G. Harvey, Baltimore, Md.; W. H. Koontz, Somerset, Pa.; S. A. Philson, S. Philson, Berlin, Pa.; *Brownsville & New Haven*—President, J. B. Washington; directors, A. L. McFarlane, Irwin Station, Pa.; W. J. Kline, Greensburg, Pa.; A. O. Tintzman, Geo. W. Wilson, Pittsburgh, Pa.; W. H. Markle, Welty McCullough, Greensburg, Pa.; *The Salisbury Railroad Company* had a meeting at Meyersdale, Pa., and elected officers as follows: President, Wm. S. Bissell, Pittsburgh; Vice-President, E. K. Hyndman, Connellsburg; directors, A. H. Coffroth, Somerset, Pa.; D. Kaine, Uniontown; Chas. Donnelly, Pittsburgh; Wm. Baldwin, Connellsburg; F. S. Bissell, Pittsburgh; E. K. Hyndman, Connellsburg; John Auspach, Philadelphia, and George Gormley, Pittsburgh.

Boston, Revere Beach & Lynn.—At a special meeting last week, Matthew Bolles and L. S. Judd were chosen directors in place of S. B. Duse, deceased, and Charles W. Lock, resigned. The President, Matthew Bolles, and David L. Webster, were appointed a committee to report a code of by-laws to the next annual meeting.

Braddock's Bay.—Mr. P. C. Cunningham, late Road-Master on the New York Central & Hudson River, is Superintendent of Construction; office in Rochester, N. Y. Hemann Glass, H. C. Brewster, A. Pomeroy, C. H. Babcock, Horace McGuire, J. H. Kingsbury, R. K. Dryer and G. W. Jacobs are directors, all of Rochester.

Chicago & Grand Trunk.—Mr. Samuel R. Callaway, late Superintendent of the Detroit & Bay City Railroad, has been appointed General Superintendent, with office in Chicago, to take effect May 15. Mr. Callaway entered railroad service as a clerk under Mr. Joseph Hickson, on the Grand Trunk, 20 years ago. He has served since on the Great Western, the Detroit & Milwaukee, and the Detroit & Bay—on the last two as Superintendent.

It is reported that Maj. C. B. Peck will be made General Traffic Manager, with office in Chicago.

Columbus & Hocking Valley.—The official circular of this, the Columbus & Toledo and the Ohio & West Virginia companies makes W. H. Lott not Assistant Superintendent of the three roads, as the telegraph announced last week, but Superintendent of the Columbus & Hocking Valley, taking the place of George R. Carr, who becomes General Superintendent of the three roads, dating from May 1.

Columbus & Toledo.—Mr. M. T. Seymour has been appointed Superintendent, dating from May 1. He has been Assistant Superintendent.

Elmira & Williamsport.—At the annual meeting in Philadelphia, May 2, the following board was chosen: President, Thomas Neilson; Managers, Thomas Kimber, William Read Fisher, Lewis P. Geiger, Thomas K. Longstreth, Alexander Bacon, William D. Neilson. The road is leased to the Northern Central and forms part of its main line.

Lake Shore & Michigan Southern.—At the annual meeting in Cleveland, May 4, the old board of directors was re-elected, as follows: William H. Vanderbilt, Cornelius Vanderbilt, William K. Vanderbilt, Augustus Schell Samuel F. Barger, John E. Burrill, Darius O. Mills, New York; Amasa Stone, Henry B. Payne, Cleveland, O.; William L. Scott, Charles M. Reed, Erie, Pa.; Rassel Brown, Warren, Pa.; Albert Kepp, Chicago. It is said that about 420,000 shares out of the 500,000 voted.

New York, Lake Erie & Western.—Mr. George O. Thompson, formerly in the company's land office at Hornellsville, has been appointed Road-Master of the Western Division, with office at Dunkirk.

Norfolk & Western.—The purchasers of the At-

lantic, Mississippi & Ohio Railroad at the foreclosure sale, at a meeting in Norfolk, Va., May 3, organized the Norfolk & Western Railroad Company with the following board of directors: George F. Tyler, Clarence H. Clark, F. J. Kimball, Edward A. Rollins, Geo. C. Clark, Robert Minturn, Philadelphia; C. C. Baldwin, H. Victor Newcomb, W. B. Isham, C. D. Wood, New York; U. L. Boyce, Boyceville, Va.; John B. Whitehead, Norfolk, Va.; J. Arthur Johnson, Petersburg, Va., and Charles W. Strahan, Lynchburg, Va. The officers are as follows: Geo. F. Tyler, President; F. J. Kimball, First Vice-President; Henry Fink, Second Vice-President and General Manager; G. R. W. Armes, Secretary; W. G. MacDowell, Treasurer, and E. Portlock, Auditor.

Mr. Tyler is one of the new Reading directors; Mr. Kimball is President of the Shenandoah Valley Railroad, which will form the outlet of the road to the Northeast; Mr. Fink (brother of Albert Fink) has been on the road many years and was one of the receivers; the two Clarks, Newcomb and Baldwin, are said to represent the Louisville & Nashville interests.

North Carolina Midland.—Col. J. B. Yates has been appointed Chief Engineer of this new company, which is organized to extend the Virginia Midland through North Carolina.

Ohio & Mississippi.—Mr. Charles W. Hinsdale, late Train Dispatcher of the Eastern Division, has been appointed Train Master of the East and Middle divisions and the Louisville Branch, and Mr. A. J. Frazier has been appointed Chief Train Dispatcher. The offices of both are at Seymour, Ind.

Ohio Southern.—The following board of directors was elected last week: B. S. Henning, Austin Corbin, J. R. Maxwell, Henry Graves, Dumont Clark, Alfred Sully, of New York; O. S. Kelly, Amos Whitney, Geo. H. Frey, J. H. Downey, Ford Woods, of Springfield, O.; H. L. Chapman, of Jackson, O. Several of these are directors of the Indiana, Bloomington & Western. B. S. Henning has been chosen President and Alfred Sully Secretary.

Oregonian.—Mr. J. M. Fillmore, late Assistant General Superintendent of the North Pacific Coast road, has been appointed General Superintendent of this company's railroads and steamers.

Mr. James Walsh is Master Mechanic. The general office is at Portland, Oregon.

Pennsylvania.—The following are the results of elections in Philadelphia, May 2, of various companies leased or controlled by the Pennsylvania: *Sunbury, Hazleton & Wilkesbarre*—President, J. N. Dubarry; directors, D. B. Cummins, Wistar Morris, Henry M. Phillips, G. B. Roberts, Edmund Smith, John Price Wetherell, *Shamokin Valley & Pottsville*,—President, George B. Roberts; managers, Wistar Morris, J. N. Dubarry, Jacob P. Jones, A. J. Cassatt, Edmund Smith, John P. Green, *Tyrone & Clearfield*—President, J. N. Dubarry; directors, Wistar Morris, Strickland Kneass, Henry M. Phillips, G. B. Roberts, N. P. Shortridge, Edmund Smith, *Brandywine & Waynesburg*—President, John Curnow; directors, J. N. N. Dubarry, Edmund Smith, G. B. Roberts, S. M. Felton, N. P. Shortridge, Wistar Morris, S. Kneass, William Morton, J. M. Sloob, B. F. Kinzer, James McClure, Amos Diller, *Charter*—President, G. B. Roberts; directors, S. M. Felton, Alexander Biddle, N. P. Shortridge, Wistar Morris, Strickland Kneass and J. N. Dubarry, *Pomeroy & State Line*,—President, Strickland Kneass; directors, G. B. Roberts, Edward Smith, Wistar Morris, Eli Slifer, James P. Cohen and S. C. Stewart, *Catawissa*.—At the annual meeting in Philadelphia, May 1, the following board was chosen: President, M. P. Hutchinson; directors, I. V. Williamson, F. K. Shipper, Emmor Weaver, George C. Carson, Joseph C. Harris, John S. Graham. The company's road is leased and worked by the Philadelphia & Reading.

Pennsylvania Co.—Maj. Robert Emmett, latterly Eastern Passenger Agent (at Indianapolis) of the Vandalia Line, has been appointed District Passenger Agent of all the Pennsylvania lines centering at Indianapolis, his district including pretty nearly all points in Indiana south of the Fort Wayne road. Major Emmett, who was formerly a conductor on the Central of New Jersey, went to Chicago about 1870 as Western Passenger Agent of the Allenton Line. After that line was suspended he went to the Vandalia Line, and has been with it since.

Pittsburgh, Oakland & East Liberty.—Mr. D. W. C. Bidwell has been re-elected President and Treasurer, and Harvey N. Rowe Secretary.

Pittsburgh Southern.—At the annual meeting in Pittsburgh, May 2, the following directors were chosen: Hon. James H. Hopkins, President; James W. Kuntz and J. Wright, Washington, Pa.; J. W. Rowland, Emlenton; F. B. Laughlin, John L. George and J. P. Beal, Pittsburgh.

Pittsburgh & Western Narrow-Gauge.—At the annual meeting in Pittsburgh, May 2, James Callery, A. M. Marshall, John A. Caughey, John W. Chalfant, John E. Downing, James D. Callery, C. B. Herron, E. S. Passavant, Chas. Gibson, H. W. Oliver, Jr., Jacob Painter, George Chalfant and A. M. Brown were chosen directors, and James Callery President.

Richmond, Toledo & Chicago.—Samuel Colt, of Hartford, Conn., is President of this recently organized West Virginia corporation.

Rochester & Pittsburgh.—Mr. Wm. E. Hoyt, late of the New York, Chicago & St. Louis survey, has been appointed Chief Engineer.

Vicksburg & Meridian.—Mr. George Arents, of New York, has been elected President.

Wilmington & Northern.—At the annual meeting at Coatesville, Pa., May 2, the following management was elected: President, Col. H. A. Dupont; directors, George Brooke, A. L. Foster, Richard Elv., Dr. Charles Huston, Chas. Wheeler and John S. Gerhard; Secretary and Treasurer, P. S. Ermold; Engineer and General Superintendent, J. H. Thompson.

PERSONAL.

—Mr. Wm. H. Vanderbilt sailed for Europe Saturday in the Germanic, in company with his uncle, Capt. Jacob Vanderbilt, and Mr. Samuel F. Berger. The trip is for recreation, like so many others Mr. Vanderbilt has taken, and he expects to return on the same steamer, remaining in Europe not more than a week.

—Mr. Allen Manvel, who left the position of Assistant General Superintendent and Purchasing Agent of the Chicago, Rock Island & Pacific after some twenty years' service to become Assistant General Manager of the St. Paul, Minneapolis & Manitoba, was presented with a beautiful silver tea service by his Chicago friends and associates, April 28, at his house in Chicago.

The directors of the Atlanta & Charlotte Air Line have published resolutions adopted by them March 28, in which they say that their relations with Mr. G. J. Foreacre, their

General Manager, being about to cease because of the lease of the road, "they desire hereby to convey to him an expression of the satisfaction and confidence inspired by his efficient and faithful services in the development and protection of the interests of this company, and by the integrity, skill and ability with which he has conducted its affairs." They say also that by the understanding with the lessees, Colonel Foreacre might at his option continue to act as General Manager of the Air Line for two years, under the Richmond & Danville's control. It is said that he will remain, though he had intended to resign.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Month of April:	1881.	1880.	Inc. or Dec.	P. c.
Denver & R. G.	\$433,212	\$110,076	I. \$323,136	292.0
Mobile & Ohio	162,027	140,091	I. 21,936	15.7
Northern Pacific	214,755	186,075	I. 28,680	15.4
St. Louis & San Fran	264,937	174,260	I. 90,677	52.0
Fourth week in April:				
Denver & R. G.	\$128,759	\$54,807	I. \$73,952	135.0
St. Louis & San Fran	83,600	48,900	I. 34,700	71.0
Third week in April:				
Chicago & Alton	\$156,955	\$141,856	I. \$15,009	10.6
Chi. Mil. & St. P.	264,000	194,452	I. 69,548	35.8
Chi. St. P. M. & O.	45,246	30,210	I. 15,036	50.0
Cin. & Springfield	17,679	16,752	I. 927	5.5
Cleve. Col. Cin. & Ind.	71,347	68,978	I. 2,369	3.4
Denver & R. G.	104,104	36,800	I. 67,304	183.0
E. Tenn. Va. & Ga.	23,516	19,797	I. 3,719	18.8
Flint & Pere M.	39,749	30,698	I. 9,051	29.5
Grand Trunk	216,614	182,546	I. 34,087	18.7
Great Western	112,671	88,109	I. 24,562	28.0
Hannibal & St. Jo.	44,263	48,051	D. 3,788	7.8
Hous. & Tex. Cen.	64,616	63,205	I. 1,411	2.3
Ind. Bloom. & Nor.	28,665	24,032	I. 4,573	19.0
Int. & Gt. Nth.	41,078	26,375	I. 14,703	55.8
Louisville & Nash Mem. & Charles.	195,500	132,500	D. 63,000	47.5
Mil. Lake Shore & Western	17,272	15,738	I. 1,534	9.7
Burl. C. R. & Nor.	10,004	6,354	I. 3,740	59.0
St. L. A. & T. H. Main Line	42,654	28,623	I. 14,031	49.0
Do. Belleville Line	31,209	23,480	I. 7,729	33.0
St. L. Iron Mt. & Southern	14,790	11,006	I. 3,784	34.4
St. L. & San Fran.	127,100	109,334	I. 17,766	16.2
St. P. Minn. & Man.	57,683	39,763	I. 17,920	45.1
St. Paul & Sioux City	98,036	83,279	I. 14,757	17.7
Scioto Valley	23,602	29,555	D. 5,923	20.0
Wab. St. L. & Pac.	6,191	4,440	I. 1,751	39.4
Second week in April:				
Cairo & St. Louis.	\$8,388	\$7,826	I. \$562	7.2
Cleve. Mt. V. & Del.	8,556	8,926	D. 370	4.1
Des Moines & Fi. Dodge.	6,478	4,670	I. 1,808	3.9
Lake Erie & West Mem. Pad. & Nor.	22,187	18,879	I. 3,308	17.5
Pad. & Eliz.	4,094	3,383	I. 711	21.0
9,766	6,804	I. 2,962	43.5	
Peoria, Dec. & Ev.	8,017	6,284	I. 1,733	27.9

Chicago and Milwaukee Receipts.

For the month of April the receipts of grain, flour and hogs have been, for four years:

Chicago:	1878.	1879.	1880.	1881.
Grain, bush....	8,730,364	8,440,513	5,858,314	5,405,521
Flour, bbls....	304,871	284,073	233,007	487,875
Hogs, No.	373,541	326,989	470,143	331,600
Milwaukee:				
Grain, bush....	2,626,746	1,075,576	678,884	1,001,198
Flour, bbls....	213,469	178,831	144,007	307,840
Hogs, No.	11,398	11,116	24,935	19,052

Chicago grain receipts were thus not much lighter this year than last, and taking grain and flour together, its receipts were a fifth larger than last year.

At Milwaukee grain receipts were nearly a third larger and flour receipts more than twice as large as last year; but grain receipts were exceptionally light there last year. Taking flour and grain together, however, Milwaukee's April receipts this year were 80 per cent. more than last year, and 27 per cent. more than in 1879, but 33 per cent. less than in 1878.

The hog receipts at both places are much lighter than last year.

Coal Movement.

Coal tonnages for the week ending April 23 are reported as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Anthracite.....	415,746	304,774	I. 90,072	5.3
Semi-bituminous....	109,171	81,733	I. 27,438	35.5
Bituminous, Penna....	42,024	62,549	D. 20,523	32.8
Coke, Penna....	51,233	44,444	I. 6,789	15.3

Grain Movement.

For the week ending April 23 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past eight years:

Year.	Total.	By rail. P. c. by rail.	Receipts.	Shipments.
1874.	3,252,166	2,532,989	1,463,849	58.0
1875.	3,392,287	1,677,116	1,516,449	96.0
1876.	3,210,437	3,707,487	2,072,946	56.0
1877.	3,002,585	3,982,417	1,303,754	33.4
1878.	3,488,560	3,034,035	907,549	29.8
1879.	3,426,327	3,017,955	907,549	4,532,797
1880.	2,912,136	3,984,877	1,181,904	29.7
1881.	3,629,586	4,350,249	3,543,249	81.5

The receipts of the Northwestern markets, though larger than in the corresponding week of any previous year, are a trifle smaller than in the three weeks preceding in this year. The shipments of these markets, although lake navigation was not open, were larger than in the corresponding week of any previous year, and the rail shipments have been exceeded but a few times. The Atlantic receipts, however, were a little less than in the corresponding weeks of 1879 and 1880. They were a little larger than the previous year.

Of the Northwestern receipts for the week this year, St. Louis had 33.5 per cent., Chicago 27.8, Peoria 14.7, Toledo 8.7, Detroit 6.9, Milwaukee 4.4, and Cleveland 4 per cent. Again Chicago has an unusually small and St. Louis an unusually large proportion. St. Louis' receipts are the largest in amount that it has had this year, and among the largest it has ever had. The wheat receipts of Chicago are especially small—only 8 per cent. of the whole; while St. Louis had 35 per cent.

Of the Atlantic receipts, New York had 53.8 per cent., Baltimore 17.4, Boston 12.9, Philadelphia 8.7, New Orleans 5.5, Portland 1.6 and Montreal 0.1 per cent. New York has a larger quantity and proportion both than it has had

before since last November. Very seldom, indeed, has it ever received so much grain in a week when the Erie Canal was closed. Philadelphia and Baltimore receipts, on the other hand, were comparatively light.

Exports from Atlantic ports for five successive weeks have been:

	Apr. 27.	Apr. 20.	Apr. 13.	April 6.	March 30.
Flour, bbls....	118,901	138,759	86,524	120,065	129,789
Grain, bush....	3,117,703	3,528,623	4,009,384	4,422,442	4,316,444

The grain exports thus have continued to decrease.

For the four months ending with April, receipts and shipments at Chicago and Milwaukee are reported as follows:

safety appliances and means of heating, machine and repair shops.

To facilitate the intended examination, it is necessary that this office should be furnished, on or before June 1, 1881, the following information concerning your road, viz.: "Name or number and location, together with general description and date of construction, of all important bridges.

"The name of the bridge company who make your bridges, together with the guarantees they make as to quality of material used.

"Location of embankment or cuts of unusual dimensions.

"Location of tunnels, if any.

"Location of machine and repair shops.

"Location of principal curves, with length and radius of curvature.

"No specified form for making this report is required, it being only necessary that your reply should contain the information which is desired, and which will be classified in this office in such manner as to facilitate the inspection of all important points of the leading railroads of Ohio, without the necessity of wasting time by going over such as have no public interest."

Professor McFarland, of the Ohio State University, has been selected as one of three engineers to make this inspection. The Legislature has appropriated the magnificent sum of \$700 to pay the cost of it!

OLD AND NEW ROADS.

Atlantic, Mississippi & Ohio.—May 3, at Norfolk, Va., M. F. Pleasants, Master, submitted his report in the United States Circuit Court, to the effect that he had received the purchase money for this railroad from Clarence H. Clark and others, amounting to \$8,505,000, certificates of deposit for which he turned over to the Court as follows: Union Trust Company of New York, \$5,000,000; Fidelity Trust Company of Philadelphia, \$3,200,000; Exchange National Bank of Norfolk, \$305,000. He reported also that he had delivered a deed to the said Clarence H. Clark and others, conveying to them all the property of the Atlantic, Mississippi & Ohio Railroad. The Court confirmed the report of the Master. This, then, is the last chapter in the history of the company, Mr. Clark and associates having organized the Norfolk & Western Railroad Company, as its successor, the same afternoon. In this new company the Louisville & Nashville people have a large and, perhaps, a controlling interest, which they seem to have acquired partly to prevent its being united with the East Tennessee, Virginia & Georgia, and the system which Col. E. W. Cole is managing; though by the construction of a not very long line the Louisville & Nashville can be united with it and find in it an outlet to the East.

Baldock's Bay.—At a meeting in Rochester last Thursday the directors determined to begin grading between Rochester and the Holy Sepulchre the next Monday. The work is not done by contract, but directly by the company under its own Superintendent of Construction. It hopes to have its line in operation by August. It is to be a suburban road.

Brighthope.—This company intends soon to change the gauge of its road from 4 ft. 8½ in. to 3 ft., and extend it 12 miles eastward to Bermuda Hundreds on James River, where vessels drawing 20 ft. can lie at its wharves. The road at present extends from Clover Hill, Va., eastward 18 miles to Osborne's Landing. The company owns extensive coal mines at Clover Hill, being the successor of the Clover Hill Mining Co., and its road is used, chiefly for carrying its own coal.

Canada Pacific.—The company took possession of the road May 2. Four engineering parties left Winnipeg that day, via Benton, Montana, for Old Bow Fort, where they will divide and explore Rocking Horse, Vermillion, Horose, and Koosena passes for the Canada Pacific. If a southern pass proves practicable the through route to the Pacific coast will be 150 miles shorter than by the Yellow-head pass. A party has left Victoria, British Columbia, to explore the same passes from the west side of the mountains.

Central of New Jersey.—An order has been issued prohibiting baggage-masters, brakemen and other employees from carrying any packages, merchandise, news letters for the press, etc., unless the same are waybilled.

Chicago & Northwestern.—The fine new depot at Chicago, which has cost nearly a quarter of a million, was opened last Monday.

Chicago & Western Indiana Belt.—This company proposes to construct a railroad from the junction of the South Chicago Branch of the Chicago & Western Indiana west to the line of the Grand Trunk (late Chicago & Southern), in connection with which another short new section of road will be made west and south of Chicago, uniting all the railroads there. It is said that the necessary new road will not cost more than \$400,000.

Chicago, Milwaukee & St. Paul.—Grading on the Council Bluffs extension was begun last week. The junction with the "Cedar Rapids Line" is made at a point about half way between Cedar Rapids and Marion, 2½ miles from either.

Work has been begun on the extension of the Monroe Branch to Shullsburg, Wis. The grading is nearly completed, as far as Gratiot, on the Mineral Point Division, and it is intended to have the track laid by June. From Gratiot to Shullsburg the line has been located and the right of way for the most part secured, and grading will begin directly.

The Southern Minnesota line was opened to Flandreau April 28, the Flandreau end having been blockaded since early in January.

It is rumored that a contract will soon be let for a loop line of the Prairie du Chien Division to extend from Genesee, 29 miles west by south from Milwaukee, west by north 45 miles in a straight line through Jefferson to McFarland, 7 miles southeast of Madison. This would make a new line between Milwaukee and Madison just about as long as the present one via Watertown, but generally only a very few miles from the line which the Chicago & Northwestern is building.

Chicago, Pekin & Southwestern.—The sale has been postponed for thirty days to allow time for examination of witnesses as to the validity of the issue of the second-mortgage bonds, the holders of which obtained the decree of sale.

Cincinnati Southern.—At the stockholders' meeting of the Cincinnati Railroad Company, which works this road, in Cincinnati, May 3, it was voted to increase the capital stock from \$2,000,000 to \$5,000,000. Out of 31,850 shares 23,701 voted, all in favor of the proposition. The increase of stock is with a view of taking a long lease of the road under new law. The trustees, it is announced, have

determined that the term of this lease shall be for 75 years.

Columbus Union Depot.—Mr. H. Sabine, Railroad Commissioner of Ohio, recently appointed Profs. R. W. McFarland and S. W. Robinson to make an examination into the condition of the union depot in Columbus. These engineers reported April 28 that between April 5 and 28 one of the trusses bulged out 2.8 in., and that the fact that the upper chords of the trusses were buckled where they were not originally proved that the roof is falling, and that its life must be short unless it is strengthened. They found that certain measures that had been taken to strengthen the trusses were inadequate, and declared that the building would be placed in imminent peril by a heavy storm.

Connecticut Valley.—A meeting of the dissenting first-mortgage bondholders at Hartford, April 30, decided to notify the company not to place another mortgage on the road and the state Treasurer not to receive, as trustee, any such mortgage, and to caution the public not to purchase any bonds that may be issued purporting to be secured by such mortgage.

Dayton & Michigan.—Sealed proposals will be received until May 14 by the First National Bank of Cincinnati, O., for \$1,346,000 of the first consolidated mortgage 5 per cent. bonds of this company. No bid will be received at less than par and accrued interest. The interest and principal of the bonds are guaranteed by the Cincinnati, Hamilton & Dayton Railroad Company. The present mortgage debt is \$2,728,000 (or less than \$20,000 per mile), for which amount this mortgage is made. The 7 per cent. bonds maturing July 1 will be paid at maturity or will be received at 100% and accrued interest in settlement of the new 5 per cent. loan.

Delaware Western.—Major Canby, the engineer in charge of the surveys for this road, has made extensive surveys between Baltimore and Newark, and has orders now to locate this part of the line.

Evansville, Seymour & Bellefontaine.—A corps of engineers has been sent out to locate the line from Evansville, Ind., toward Newburg, and it is said that grading will be begun within 30 days.

Evansville & Terre Haute.—The Chicago & Eastern Illinois has purchased a controlling interest in this road, which gives it a line from Chicago nearly due south 287 miles to the Ohio River at Evansville. It is said that \$100 per share was paid for 9,000 \$50 shares, and \$75 for 4,000. There is \$1,020,500 of common and \$100,000 of preferred stock and \$1,150,000 of bonds, representing 136 miles of road. The common stock paid its first dividend (2 per cent.) in 1877; in 1877-78 it paid 4½ per cent., and since that 5 per cent.

Fort Scott & Topeka.—It is reported that a corps of engineers have begun the surveys for this proposed road at Fort Scott, Kan.

Fort Scott & Wichita.—The first spike was driven April 25, and it is announced that the road will be completed to Wichita about Jan. 1 next.

Grand Trunk.—Lansing is said to have secured the division shops of the Cleveland & Grand Trunk, subscribing \$10,000 for that purpose.

At Grand Trunk Junction, three miles west of Detroit, the company has bought four acres of land to extend its yard, etc.

Indiana, Bloomington & Western.—At a meeting of the stock and bondholders in Indianapolis, April 27, the lease of the Cincinnati, Sandusky & Cleveland and the Columbus, Springfield & Cincinnati roads was ratified by a unanimous vote of the securities represented, which carried 186,504 out of a possible 160,000 votes. The connecting link between Indianapolis and Springfield is to be completed by next January.

Knoxville & Ohio.—The contracts for the grading of the extension of 18 miles from Careyville, Tenn., to the Kentucky line were let last week as follows:

Sections 1, 2, 8, 9, 10, 17, 18 and 19 were awarded to M. J. Condon & Co., of Knoxville. Sections 3 and 4 to J. L. Offutt, of Knoxville. Sections 5 and 9 to Myer, Hay & Co., of Shelbyville, Ky. Sections 11 and 13 to Martin Shea, of Knoxville. Sections 13, 14, 15 and 16 to J. D. Offutt, of Anderson County, Tenn. Section 7 was awarded to Major N. E. Scales.

Louisville & Nashville.—Action has been brought against the company in Kentucky for violation of the Sunday law in running certain trains and the employment of men. The suit is for the recovery of \$50 fine for running a train, and six fines of \$50 each for employing the trainmen on Sunday.

Meriden & New Haven.—Meriden manufacturers held a meeting April 30 to discuss the building of a narrow gauge road to New Haven, 18 miles, which it was thought could be made for \$10,000 a mile. The meeting adjourned to give time for a conference with John H. Starin, proprietor of the steamboat line between New Haven and New York, who, it was thought, would take stock in order to secure freight for his boats.

Minneapolis & Northwestern.—This company has begun proceedings to condemn the right of way for a branch from Osseo to Crow River, near Hassan, a distance of 12 miles.

Minneapolis & St. Louis.—The part of this road in Iowa has heretofore been owned by two distinct corporations, the Minneapolis & Iowa Southern and the Fort Dodge & Fort Ridgely. These have now been consolidated with the Minneapolis & St. Louis.

Missouri Pacific.—Arrangements have been made for running passenger cars through between St. Louis and Dallas and Fort Worth on the Texas & Pacific, by way of this road and the leased Missouri, Kansas & Texas, whose Pacific Division was completed to Fort Worth last week. The first train is to leave next Monday, May 9.

Mutual Union Telegraph.—It is reported that the issue of \$5,000,000 of bonds and \$10,000,000 of stock, which was advertised last week, was more than subscribed for before the end of the week.

New Orleans Pacific.—The Shreveport (La.) Times of April 27 says of this road: "The road-bed is completed and the cars are running out about seven miles beyond the city, and the grading between this place and Pleasant Hill, in DeSoto Parish, is almost completed. Ties sufficient to lay 20 miles have been cut and delivered along the line of road from this place southward. Work is progressing from Donaldsonville northward, from Alexandria north and south and from this place southward, and each day the laboring forces at all points are being swelled, which insures the completion of the road between this place and New Orleans by the 1st of September. Yesterday the contractors were engaged grading a gap of about half a mile between the eighth and ninth mile, and which, it was thought, they would complete by this afternoon so that the construction train will be running out from the city, a distance of nine miles, before the close of the present week. When the grading of the tenth and eleventh miles shall have been completed, which will probably be in about ten days or two weeks, the road will then be graded and ready for tracklaying for a distance of 24 miles, and we are told that the work of tracklaying will proceed at the rate of a mile a day."

"The first station on the New Orleans Pacific is 8½ miles from the city, and is known as Rieson. The next is Stonewall, 7½ miles beyond Rieson.

"Already two engines and 24 flat cars have been shipped to Alexandria, and other engines will be forwarded as the work progresses at that point. Two engines are in use at this end and another very large one was received Sunday night at Marshall and will probably arrive here during the week. There is already on hand at the construction depot iron enough to complete forty miles of road and more arriving each day, which insures that the track-layers will not be delayed for want of material.

"Since work on this road was begun the contractors have had to labor under very trying disadvantages, such as an unprecedent cold winter, which seriously retarded operations, and a great scarcity of experienced labor, but with the return of pleasant weather and a heavy increase of laborers and teams, work all along the line will be pushed vigorously."

New York, Chicago & St. Louis.—Gen. Casement of Painesville, O., who has the contract for building this road between Cleveland and Buffalo, says that the whole of the line between Cleveland and Erie has been subtlety, and work would be commenced this week on every section of it. A large force of men will be put on, and the work prosecuted vigorously to completion.

New York City & Northern.—The New York city connection of this road was opened for traffic Sunday, May 1. It consists of the bridge across the Harlem River from the northern terminus of the Metropolitan Elevated road at 155th street and Eighth avenue, and a road thence, on the east bank of the Harlem northward to High Bridge, about one mile. The river is crossed on a fine iron bridge with a draw-span of 300 ft., built under the direction of Mr. A. P. Boller, Chief Engineer. High Bridge has always been quite a pleasure resort, though not very easily accessible, and this road will doubtless largely increase the number of visitors. Last Sunday trains were run about every ten minutes (with elevated railroad rolling stock), and were well patronized at a fare of five cents.

New York, Lake Erie & Western.—The contract for the new shops at Hornellsville has been let. They will cost about \$180,000. The work of re-building the Buffalo terminals, etc., has been let to Craigie, Rafferty & Yeomans, of Buffalo, for \$275,000.

The Buffalo Commercial of May 3 gives the following account of the Buffalo improvements: "The work includes the rebuilding and enlarging of the yards at that point. Twenty-six miles of new track will be laid and an entire rearrangement of the old tracks take place. The present main tracks will be taken up and built a long distance to the northward of where they now are. The main line trains, those of the Niagara Falls, Lockport and Belt Road branches, and those of the Great Western and Grand Trunk railways, will all enter and depart on the same tracks. The present passenger depot and the transfer houses west of it will be moved northward about 200 ft. A new transfer house and filling up of the trestle over the Central Railroad is also part of the work contemplated. The new coal trestle, which was fully described when work was commenced, is now well advanced. It will be 1,300 ft. long, and contain 44 pockets. The material for the improvements will be enormous in quantity consisting of 6,000 cubic yards of filling and graveling; the laying of three miles of sewer pipe and 6,000 ft. of water pipe; 200,000 ft. of switch ties, board measure, will be used; the track laying will require 120 frogs and 3,000 tons of steel rails."

The wood-work of the bridge over Clear Creek, near Collins, on the Buffalo & Southwestern line, caught fire last Saturday afternoon, and the stringers and ties for about 60 ft. were burned. The work of restoring it was begun so promptly and proceeded so energetically that by 7:45 the same evening trains could pass.

New York, Pennsylvania & Ohio.—The third rail on the part of the road west of Meadville, Pa., is to be removed this month.

New York, West Shore & Chicago.—The Albany Journal reports that Newburg is to be the terminus of the First Division; about 1,000 men are at work on the line and contracts have been awarded for grading the section between Schenectady and Little Falls.

North Carolina Midland.—A telegram from Winston, N. C., April 27, says that this company has been formed by the consolidation of the Dan Valley & Yadkin River, the Winston, Salem & Madison and the Winston, Mocksville & Mooresville Railroad, to build a railroad of 4 ft. 8½ in. gauge to suit the Virginia Midland Railroad, and is the company under whose management the Virginia Midland is to be extended through North Carolina and South Carolina to connect with the railroad system further south. The board at Winston, April 26 and 27, gave a hearing to delegations of representative men from North Carolina and South Carolina, each of the delegations being anxious to have the road extended through their sections, and offering material aid in the construction of the road. The board decided to commence the work of construction at once. Col. J. B. Yates was elected Chief Engineer. Several surveys have been authorized on proposed routes in North and South Carolina, the terminal points being left open. The Virginia Midland is expected to contribute to the construction of that portion of the line in Virginia, and the president was authorized to commence the work of construction at once between the Virginia line and Mocksville, N. C.

Northern Pacific.—The surveys for the Southwestern Branch began April 29, at Fargo, and grading was to begin in a few days.

Oil City & Ridgway.—This road, with 666 acres of coal land, was bought for the Buffalo, Pittsburgh & Western Company last week by President Jones for a little less than \$500,000. The road is but 6½ miles long, from Oil City to Cranberry, built in 1876, but its charter provides for a line 90 miles long from Oil City eastward to the Philadelphia & Erie at Ridgway. President Jones says the road is to be extended southeastward to the Clarion coal district, and that a bridge will be built for it at Oil City if the Allegheny Valley, whose bridge it now uses, does not grant reasonable tolls for coal over it, in place of the present prohibitory rate. Others speak of an extension to Ridgway, in accordance with the charter, to make it a link in a "great trunk line" by way of the Central of New Jersey, the Reading, etc.

Ontonagon & Brule River.—The Michigan Legislature has been considering and seems likely to pass a bill giving this company a land grant for a railroad from Lake Superior at Ontonagon southeastward to Brule River, which forms

the boundary between Michigan and Wisconsin. The southern terminus of such a road would very nearly reach the Menominee River line of the Chicago & Northwestern. The bill provides for giving 120 sections of land for every 20 miles of road, and the completion of the road by Dec. 1, 1886. There is some question whether the lands granted are now within the power of the state to grant.

Oregon & California.—A telegram from London, May 4, says that a letter received there from the Frankfort German Committee of the bondholders of the Oregon & California Railroad says: "President Villard's plan for a reorganization of the road is certain of acceptance at to-morrow's meeting, as his agent will vote on considerably over \$5,000,000 worth of bonds. The Frankfort Committee will continue its control and supervision over the road until the bondholder's association is dissolved on completion of the reorganization."

Oregon Railway & Navigation.—The President of the Oregon Railway & Navigation has issued a circular, in which he presents an explanation of the situation as it exists between his company and the Northern Pacific. He also gives a summary of the progress made in extending the road, and the earnings for the past four months. In regard to the Northern Pacific he says:

"Our present and future relations to the Northern Pacific Railroad Company are definitely regulated by a perpetual contract, which has been in force since last fall, and under which our exclusive enjoyment of all business, present and prospective, from the entire territory now tributary to our system is guaranteed to us. Considering the present extent of the business and its certain rapid and vast growth upon the opening of the main and branch railroad lines now being constructed by us as fast as men and money can accomplish it, the undisturbed prosperity of our enterprise is certain, no matter what the Northern Pacific may do within its territory. In the second place, the Northern Pacific, while it can benefit us as a friend, cannot hurt us as an enemy. It has no business of any consequence to give us at this time, except the transportation of materials used in constructing the portion of its main line connecting with our system. Whenever the Northern Pacific shall be finished as a through line it will be far more important to it to obtain our business than it will be for us to obtain its business. We shall not depend upon it for a through connection with the East, inasmuch as the construction of the Oregon Branch of the Union Pacific to Baker City, the point of connection with our system, within the next two years is positively assured. In fact, the question is simply, not whether we shall earn any less, but how much more we shall earn over and above our own business through friendly relations with the Northern Pacific.

"Of far more immediate consequence to us than the Northern Pacific traffic is the assurance of the traffic derived from Western Oregon for our railroad, steamship and steamboat lines. It affords me special satisfaction to announce to you that arrangements recently completed by me in Europe have insured the friendly control, in the interest of our company (but without involving in any direct or indirect liability), of not only the 312 miles of standard-gauge roads now owned and operated by the Oregon & California Railroad Company, but of 150 miles additional standard-gauge road to be newly constructed in Western Oregon, in pursuance of the arrangements referred to. Western Oregon contains a population of more than 100,000 souls. All the large towns in the state, including the city of Portland, the commercial emporium of the North Pacific coast, are situated within its limits, and it is hardly necessary for me to point out the great benefit which the control of this large system of 462 miles of standard-gauge road as a feeder to our system will be to our company.

"Unsatisfactory as the showing is of earnings, it still represents a decrease of only about \$50,000 in the net result over the corresponding months of the previous years. There is every assurance that this decrease will be more than made up rapidly during the spring, as is evidenced by the accompanying statement of earnings for the month of March. The indications are that during the remainder of the year we shall show a steady gain over last year's business. Our passenger business is especially heavy at this writing, showing a large increase of immigration. According to our official reports the acreage of wheat sown in Eastern Oregon and Washington Territory, in anticipation of the development of our railroad system, is at least one third larger than last year. The wheat crop of Eastern Oregon and Washington Territory for 1880 amounted to 90,000 tons, of which, owing to the low price of wheat and high ocean freight rates, only about 40,000 tons have so far been shipped over our lines, leaving about 50,000 tons of last year's crop yet to be transported. Adding this amount to the estimated crop for this year, say 120,000 tons, it may be taken for granted that there will be a very heavy increase in our freight business during the current year."

"The work of construction, which was seriously interfered with during the winter months by the severe and protracted cold weather, was recommenced with full vigor last month. Trains are now running through from the Dalles to Walla Walla. The line from Walla Walla to Grange City, on Snake River, a distance of 58 miles, together with the Dayton Branch (16 miles), is fully graded and ready for the ties and iron. Contracts for the lines north of the Snake River from Texas Ferry, opposite Grange City, to Colfax and Farmington (90 miles), have been let, and grading has commenced. The construction of the line from Umatilla to Baker City (about 160 miles), the point of connection with the Oregon Branch of the Union Pacific, has also been commenced from various points. The work upon the line from Portland to the Dalles (90 miles) was likewise begun some weeks since, and will be prosecuted night and day, so as to insure the completion of an unbroken rail line from Portland up the Columbia before the end of the year, which will enable us to avoid forever hereafter serious embarrassments to our business from the freezing up of the river.

"I stated, in my circular of Feb. 17, 1881, that our earnings during the winter months have been very unsatisfactory, in consequence of the extraordinary severe winter which prevailed in Oregon, as well as in other parts of the United States. From the early part of December until the middle of February it was almost continuously impracticable to operate our Columbia River water and rail lines, owing to the frequent freezing up of the river, and the unusual snow fall along its banks. The effect of this embargo upon our earnings is set forth in the following statement of gross and net earnings for the months of December, January, February and March:

	Gross earnings.	Operating expenses.	Net earnings.
December, 1880.....	\$157,574	\$148,889	\$13,684
January, 1881.....	134,581	134,483	98
February, 1881.....	160,377	141,996	18,381
March, 1881.....	306,894	150,000	156,000
Total	\$759,426	\$570,368	\$188,163

"The earnings for March are partially estimated."

The Portland *Oregonian* of April 23 says: "About 2,000 men, including those employed in clearing the route of timber, are now employed in construction on the line of this company's railroad between the Cascades and the Dalles. The distance from the Lower Cascades to the Dalles by the

line as surveyed is 47 miles. Much of the route presents great difficulties, though there are stretches of considerable length where construction will be quite easy. The number of tunnels beyond the Cascades has been reduced to two. One of these will be 200 ft. and the other about 400 ft. long. Both go through solid basalt cliffs. In several places it is necessary to split these cliffs down from the top, a distance of nearly 100 ft., to make a roadbed which will be in the form of a step or shelf on the outside of the cliff immediately over the river and ten to twenty feet from high water mark. The work at these points will be expensive and slow. But a strong force is already engaged on all the most difficult points, drilling and blasting, while the force of graders is at work in the intervals. There are, however, few places of any great length where more or less blasting is necessary. About 12 miles of road-bed, beginning at the Lower Cascades, is now practically completed. The steam drill is now engaged on tunnel work. More men are much wanted both for drill and grading. Superintendent Hallett is confident that he will complete the road between the Cascades and Dalles by October; and if 1,000 more men can be had the whole road from Portland through will be finished by the end of the year."

Trains are now running regularly through from the Dalles to Walla Walla.

Oregonian.—A correspondent at Portland writes that this company now owns 107 miles of 3 ft. gauge railroad, part on the east and part on the west side of the Willamette River, and has 28 miles under construction from Portland south to Dundee Junction, where the east and west side lines are to be united, the latter coming over the river at Ray's Ferry over a combination bridge. There are 1,200 men at work on the extension, and it is intended to have it done by July. Thereafter it is intended to extend the east side line southeastward, to connect finally with the Central Pacific Railroad at Wadsworth, Nev.

Pennsylvania.—At a meeting of the board, May 2, it was voted to declare a cash dividend of 4 per cent. for the past half-year, and to give stockholders the option of subscribing at par to the amount of one-eighth of their holdings for the new stock, to be issued in payment for the Philadelphia, Wilmington & Baltimore shares. The market price of the stock ex dividend is about \$66 for \$50 shares, representing one share and the right to take one-eighth of another for \$6.25, or 72½ for 1½ shares, equivalent to \$64 per share without the privilege. There had been much speculation with regard to the amount of the dividend and the probable terms of the issue of new stock, and from the time of the purchase of the Wilmington stock down to Saturday last the stock advanced from about \$65 to \$70. The announcement seemed to meet expectations, for prices were virtually unchanged after it was made.

Philadelphia & Reading.—The secretary informs us that the business statements of this company were last year published, with the rentals of leased lines included, in the current expenses; but that this year, since November last, the rentals are not included. But through a mistake the statement for March, 1881, was sent us without crossing out the words "including rentals of leased lines." The net profits of the railroad company for March, 1881, \$682,456.08, and for the fiscal year down to the end of March (four months), \$2,238,110.59, are those applicable to the payment of rentals due interest.

Counsel for the McCalmonts, April 30, filed a supplementary bill asking an injunction to restrain Franklin B. Gowen and associates from acting in any way for the company.

Pittsburgh, Cincinnati & St. Louis.—The shops at Logansport, Ind., where 400 men are at present employed, are inadequate to the needs of the road, and are to be enlarged at once.

Richmond, Toledo & Chicago.—This company has been organized at Charlestown, W. Va., to build a road from Point Pleasant, on the Ohio, at the mouth of Kanawha River, up the valley of the latter stream and the New River to the Virginia boundary, and is spoken of as a western connection of the Richmond & Allegheny.

San Antonio & Mexican Border.—A dispatch from San Antonio, May 4, says that Gen. J. W. Barnes and other promoters of this road, then in San Antonio, affirmed that a contract had been made for building the road from San Antonio to some point on the Rio Grande between Eagle Pass and Laredo, within 18 months. The contractors are at San Antonio, and the survey was to be begun Thursday.

Savannah, Florida & Western.—The new Florida line, extending from Waycross, Ga., direct to Jacksonville, was opened regularly May 1, in time for the great exodus of Northern people who have been wintering in Florida. The first through passenger train passed over the road April 27, making the run in 7 hours and 20 minutes. The last rail was laid April 23. The new line uses the Jacksonville station and a little of the road of the Florida Central Railroad for the present, and that road sells the tickets and attends to the terminal business in Jacksonville. The new road from Waycross to Jacksonville is entitled the "Jacksonville Division," and the old Florida branch from Dupont to Live Oak is called the "Live Oak Division."

Sonora.—The Boston *Transcript* says: "The directors of the Sonora Railroad Company have unanimously voted to build the line from Hermosillo directly north through Magdalena and up the Santa Cruz Valley toward Tucson, instead of northeast toward Deming or El Paso. This is the more natural route for local traffic, and the one surveyed some twenty years ago. The Sonora engineers, after reviewing the more easterly route, reported against its adoption. The Atchison will now be obliged to build west from its junction with the Southern Pacific at Deming, to connect with the Sonora near the Arizona line. The Sonora people some months ago organized the Arizona Southern Railroad Company and filed a location for a road from Tucson south, and this road will now come in for the extension of the Sonora in Arizona. The cost of the Sonora road will, by this change of route, be some \$9,000,000 less than contemplated, and it will be finished about nine months earlier. The distance from Guyana to Tucson is about 325 miles, and if the Arizona Southern is built southward the entire line can be in operation at least fifteen months hence."

From Tucson to Deming the distance by the Southern Pacific is 220 miles; but instead of duplicating the Southern Pacific to make the connection, the Atchison, Topeka & Santa Fe can build northward from Tucson to a junction with the Atlantic & Pacific, with about the same length of road and an independent local traffic.

The company has recently issued a circular offering for subscription stock and bonds to the value of \$1,350,000, to provide means for the construction of the line by the new route, north from Hermosillo. Already enough has been paid in to reach a point 90 miles north of Hermosillo, and the amount now called for is to complete the road for the rest of the distance.

Southern Railroads and their Prospects.—The Louisville *Courier-Journal* has published the following report of an interview with Col. E. W. Cole, whose long

experience on Southern roads gives unusual weight to his opinions:

"Colonel Cole is as busily engaged in building up railroads as ever he was. He is now in New York looking after the interests of some of his lines. It is surmised that he is anxious to secure control of the Cincinnati Southern. On his way to New York Tuesday, Colonel Cole talked freely concerning railroads in the South, and he spoke hopefully of their future. 'After the war,' said Colonel Cole, 'through no fault of the managers, most of the Southern roads were ruined. They had no rolling stock, no credit—nothing much except their charters. The work of reconstruction was necessarily slow, and the difficulties great, but they have been overcome. The Louisville & Nashville suffered less than others by the war, but more by the panic; yet to-day it is one of the best pieces of railroad property in the country. When I took hold of the Nashville & Chattanooga the stock was selling at 15, stock dividends have several times been declared and the stock is now in the neighborhood of 85. The East Tennessee & Virginia road has had a similar experience during the past year. We are steadily improving its road-bed, replacing iron with steel rails, increasing its rolling stock and paying good dividends all the while. So with the Memphis & Charleston; that property is steadily improving and the stock is advancing. We are using a gravel ballast found in Mississippi, absolutely free from dust, and it makes the best ballast in the world.'

"Referring to the recent combinations in Georgia, Col. Cole said it had long been a favorite idea with Mr. Wadley, and steps looking toward such a combination were taken before the purchase of the Nashville & Chattanooga by the Louisville & Nashville. He thought it would result satisfactorily to all parties concerned.

"At Knoxville," said Colonel Cole, "we are actively at work building a road to the Kentucky line to meet the Louisville & Nashville. We also expect to reach Asheville, via Morristown, by September, and so open a short route to that section of the coast country. This is of interest to Louisville, but your city is interested more in a Texas connection than in anything else. There in the Southwest lies an empire from which St. Louis excludes both Memphis and Louisville. Your citizens must give their earnest attention to this matter. They should secure a Texas connection, and secure it now."

"Concerning the future of railroads, Colonel Cole said their prosperity depended on the prosperity of the country. Railroad companies should concern themselves less about the price of stock in Wall street and more about improving their physical condition, increasing their earnings and decreasing their expenses. The danger is, the boom has made money easy, and managers are apt to give less attention to expenses than they did when times were hard. Expenses should be watched at all points."

"When asked if he wished to secure the Cincinnati Southern, Colonel Cole was non-committal. He said he was not very hopeful concerning its earning capacities—at any rate he would rather understand something more about the size of the elephant before he purchased."

Southwestern Consolidation.—There has been a great deal of interest, especially among speculators in stocks, during the past week as to the terms on which the Texas & Pacific and the St. Louis & Iron Mountain should be consolidated, that being the next step in the programme toward the general union of the Gould Southwestern roads, the first of which is accomplished by the purchase of the International & Great Northern by the Missouri, Kansas & Texas. It is said that the Iron Mountain stockholders claimed that their shares should have the higher valuation, because their earnings are so much the larger; while the Texas & Pacific people claimed the advantage because their debt per mile is so much the lighter. At one time it was said that the Iron Mountain insisted that its stock should stand 55 to 50 for Texas & Pacific, and then it was rumored that the Iron Mountain would be left out of the system, and the Missouri, Kansas & Texas be made the sole outlet of the Texas system. Again it was announced that the Iron Mountain would be given the privilege of buying the Texas & Pacific; and the last (Tuesday's) report is that an entirely new arrangement is made, by which the Missouri Pacific will first buy a controlling interest in the Iron Mountain, three shares of Missouri Pacific stock being given for four of Iron Mountain. The various stocks have fluctuated greatly as the different stories were told, and that often seems to have been the object of telling them.

Texas Western.—Articles of incorporation were filed at Austin, April 28. The incorporators are A. M. Gentry, W. D. Cleveland, B. Abbott, W. R. Baker, H. A. Rice, E. Pilot, H. S. Fox, T. H. S. Canton, J. G. Feach, T. W. House, and S. K. McIlhenny, of Houston. The road is to extend from Houston westerly to a point on the Rio Grande at or near Presidio del Norte; from a point on the main line in Blanco County in a northwesterly direction to the north line of Sherman County; from the main line in Fayette County to the town of Bordeau; from a point on the main line in Caldwell County to San Antonio, and from Houston in an easterly direction to Sabine Pass. The capital stock is \$30,000,000.

There has been a company by this name, some of whose directors are incorporators of this new one, which in 1878 had completed 42 miles of 3 ft. gauge road from Houston westward, but we believe that it has not been operated recently. It doubtless is to be part of the new project.

The Labor Market.—The trackmen on the Delaware, Lackawanna & Western, near Morristown, N. J., who have been receiving \$1 a day, struck the other day for higher wages. The movement is unimportant as to the number of the strikers, but it is thought that their example will be generally followed along the line.

It is reported that the Central Railroad Company of New Jersey has voluntarily raised the wages of its trackmen from \$1.10 to \$1.25 a day.

The Italian laborers on the new tunnel of the New York, Ontario & Western at Weehawken were given an increase of wages May 2. Those who have been paid \$1.25 a day were given \$1.30, and the men who were getting \$1.50 now receive \$1.60.

A telegram from Chicago, May 3, says: "The strike among the railroad switchmen is general this morning, and clerks and yardmasters are taking the places of the strikers. The Western roads, on account of the floods, have been taking only a moderate amount of freight, and their business is not materially affected by the strike. But in the yards of the Eastern roads there are delays already, which may become serious if some arrangement is not soon made to take back the strikers or fill their places. The switchmen are quiet and orderly, and say they have no intention of preventing the companies from employing other men, but they will never yield their point or compromise." In this connection the following statement of the number of switchmen employed on the several Chicago roads, given in the *Inter-Ocean*, will be interesting: The Illinois Central has 33; Michigan Central, 65; Burlington, 70; Northwestern, 60; Alton, 50; Lake Shore, 50; Rock Island, 41; Wabash & Western Indiana, about 35; Chicago, Milwaukee & St. Paul, 20; Pan-handle, 15, and Pittsburgh & Fort Wayne & Chicago, 30—a total of 469.

The *Inter-Ocean* of April 29 says: The Chicago, Burling-